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## MUSEUM WORK BY PRIVATE VETERINARY PRACTITIONERS.*

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IT cannot be doubted that much material which would be of the greatest possible value to pathologists is daily lost, through the absence of system in preservation and through the want of appreciation of its value. This has been forcibly brought under our notice recently in Mr. Banham's excellent paper on "Post-mortem Facilities." I wish, to a certain extent, to supplement the ideas therein expressed by the remarks embodied in the following paper, but especially to lay down certain principles which should guide the private practitioner in making the utmost, from a scientific point of view, out of the material at his disposal, to show how useful matter afforded in every-day practice ought, in my opinion, to be stored up until time and opportunity be afforded for its examination. I also wish to show how this may be the basis of a collection of specimens worthy of the name of a museum, and of the highest value to the practitioner. The use of method in everything is undoubted, and it shall be my aim to lay before the meeting a "system of museum arrangement," touching but little upon the manipulatory methods therein involved, such as shall be to the private practitioner a practical guide of a practicable character, in a matter which the general run of every-day work is rather apt to prevent receiving

* An Essay read before the Central Veterinary Society at the General Meeting, December, 1880.

due consideration from him. My ideas are the fruit of some technical acquaintance with museum working, of some knowledge of the contingencies of practice, and of that appreciation of specimens which was necessary for the adequate performance of the duties of my (recent) official position. In pursuance of my object I shall first of all request you to consider the questions—whether a practitioner should have a museum ; whether he has facilities for the due preparation and conservation of the same; and whether it would not be preferable that any specimens of interest be forwarded to our educational and other professional centres, to secure the greatest amount of possible good to the greatest number of persons interested in the progress of veterinary knowledge. We shall examine the latter question first, because if we decide that anything of value ought preferably to be sent away by the practitioner, we can hardly persuade any of you that such specimens as are not worth this extra trouble will sufficiently repay for the time and labour of preservation. As a rule, specimens of value are not single and solitary; thus an unrecognised parasite is seldom the only individual of the kind present in the particular case from which it has been obtained; a diseased liver or lung may generally be divided into two or more parts, each fully exemplifying the special features of interest; and a calculus generally admits of division into symmetrical parts without the specimen being diminished in value. In such cases the practitioner's and some central museum should equally benefit. But where this satisfactory solution of the difficulty is not admissible, the centre to which we have thought to forward the specimen may be too remote, so that the parts would arrive there only in a decomposed state, unless artificially preserved ; or the features of interest in the case may be liable to obliteration from the exigencies of travel; or the interest of the specimen may be greater to the practitioner individually than it possibly can be to others, as recording triumph in the diagnosis or palliation of disease. Though neither of these arguments is conclusive, they may suffice to quiet the "qualms of conscience" by enabling the possessor to persuade himself that his duty lies in the preservation of the specimen to the best of his ability, and its retention until some opportunity occur of duly bringing it before the pro-

fessional public. But my strongest argument in favour of the view that every practitioner should have a museum of some sort, and as good a museum as it is possible for him to have, is to be seen in the fact that such a collection may be of the highest value in directions quite different from those of educational centres. If I can show to you that there is a decided difference in scope of these two claimants of specimens, you must allow that there is a decided *raison d'être* for private museums. I may hastily remind you that the public professional museums should be designed—

1. To supply for the use of students an educational series as complete as possible—specimens illustrative of ordinary cases of disease, such as they will most frequently meet with in after-life.

2. To exhibit to students, authors, and all others interested, illustrations of cases such as are unique or of very rare occurrence in ordinary practice.

3. To illustrate the relations of other sciences to veterinary surgery and medicine.

4. To indicate the progress of science by exhibition of obsolete and novel instruments and specimens, some of which have a purely historical interest.

5. To add completeness to the institution with which they respectively are connected, by order, excellence, and completeness.

To contrast with these I will now give you what I consider should be the main objects of the museum of a private practitioner:—

1. To supply to pupils, improvers, etc., illustrations of the leading points in their studies.

2. To enable the practitioner to show to well-informed clients, scientific friends, and others the exact seat of a lesion, the value of any point of conformation, or other such matters.

3. To show the practitioner at a glance the principal anatomical features of a part to be operated upon, or the lesions likely to result from any special disease.

4. To illustrate the special characters of the practitioner's work,

and thereby assist in the study of the geographical range of disease.

5. To show what extraordinary features have been occasionally evinced in the practice.

6. To illustrate such cases as the practitioner has thought it advisable to record, especially the points upon which he has thought right to lay stress.

7. To fully illustrate any *special* branch of practice which the practitioner has followed.

8. To contain ready for exhibition specimens illustrative of cases which have given rise to legal dispute or professional difference of opinion.

9. To show what modifications of ordinary instruments and appliances (as horse-shoes) the special experiences of the practitioner may have suggested.

10. To be an amusement and pride to the owner and his pupils, and a source of interest to professional and other scientific friends.

To further substantiate this basis of my opinion that every practitioner should have a museum, I shall consider these objects in detail.

1. The specimens necessary for educational purposes may be ranged under several headings, according to the sciences which form part of our professional studies. Thus for Chemistry we must recall to our minds Professor Morton's advice, and keep a few simple inexpensive appliances, such as will encourage the pupil to perform elementary experiments, and enable the practitioner to roughly test urine, bile, and so on, in so far as may be essential for diagnosis and prognosis. Many of the chemicals have a place in the pharmacy, and the few others may be purchased as required, but a set of ordinary testing reagents should be always to hand. There will also be a good supply of the most useful Materia-medica specimens in the drawers and bottles of the pharmacy, where also the student will have full opportunity and facilities for practical acquaintance with pharmaceutical processes. The less frequently used and more powerful drugs may be kept in a special part of the museum in bottles of a particular kind, their case being kept locked, they will then be available for

study, and also will be ready in cases of emergency. Care should be taken that all "new medicines" be regularly added as soon as they are noticed in the professional journals or otherwise brought before the professional public; and thus, when we think it advisable to resort to any such agent in a particular case, we shall not have the delay and trouble of hunting all over the town, or perhaps of sending to the manufacturers for it, inconveniences with which some of us are, perhaps, too familiar. Botany might be well represented by a series of the principal grasses which occur in hay, a series of the poisonous plants characteristic of the locality, and of the principal forage plants, food stuffs, and medicinal plants. Every student should prepare such series for a place in his future museum, and as "a thing of beauty" it will be to him "a joy for ever." But, wanting this, the place of actual specimens may well be occupied by a judiciously arranged series of selected botanical plates, such as are cheap and easily procurable in the present day. This section of the museum would well admit of extended notice, but we must leave our botanical cabinet after noting that it, with the chemistry and Materia-medica sections, will give the student ample facilities for his toxicological studies. I dwell thus at length on this first object, since the recent adoption by the Royal College of Veterinary Surgeons of the "apprenticeship clause" will undoubtedly throw increased responsibility upon practitioners in the matter of the education of those students who we shall expect afterwards to recruit our ranks; and we must have a clear idea of what may best be done with our pupils that they may succeed as students and subsequently in practice, and thus reflect credit on their preceptors. This innovation seems to be specially designed to secure increased practical knowledge on the part of candidates for a veterinary diploma. Consequently "Hospital Practical Details" ought to be thoroughly taught by the practitioner, and he should pride himself on the excellence of his hospital appliances, and the adoption of all the most recent improvements in this direction. He ought frequently to make the pupil work with them, and should hold him responsible for the due performance of such minor features of practice as casting, slinging, and the details of nursing of infirmary patients; the

latter, of course, to include *hospital dietetics.* Also it will be of great advantage to the pupil if he be held responsible for the state of the practitioner's stud, kennels, and farm buildings (if any), for want of knowledge of the habits of animals and of animal management is one of the greatest difficulties with which most students have to contend. The appliances should occupy a section of the museum, and near them should be the cabinet for surgical instruments. The latter should be as numerous as possible, and kept in first-class order, and also should be such as are specially required in the practice, for instruments are too expensive to be purchased by the practitioner simply for educational purposes. The student should be familiar with the names and uses of each, and he ought to see the more complex in operation, and to use the more simple as much as possible. This education in Surgery should be supplemented by facilities of access to preparations of such diseased parts as have been yielded by the practice, also by the pupil carefully keeping a record of examinations as to soundness (as see Appendix), by copying out the certificate of soundness or unsoundness which has been dictated to him during the operation. He should be required to summarize and tabulate the results at stated intervals, and the reports thus drawn up should be kept among the museum documents. Anatomy should be represented by as many articulated skeletons of domesticated animals as possible, and by sets of separated bones of each, duly labelled. There should be dried specimens of the more important joints, and often hind and fore legs, also as many with the vessels injected as possible, especially preparations of the hind limb and the fore limb dissected to show arteries, veins, nerves, and muscles. Many pretty specimens of viscera may be made with little trouble, and some of the eye, ear, and foot prove very material additions to the beauty and solid value of a museum. Of these the papier-maché French anatomical specimens (*Anatomie Clastique*) are most valuable for teaching purposes, being enlarged when necessary for convenience of demonstration; they are expensive, but wear well, not breaking so readily as wax models, and not being so cumbersome as plaster of Paris casts. The latter, however, are very cheap, and can be made by the pupil after very slight preliminary instruc-

tion; they will therefore prove important in our museum. A full series illustrating the anatomy of the teeth will look very well, and prove most useful and ornamental; it also requires but little work. Normal Histology may be represented by a series of microscope slides which have been prepared during student days or leisure subsequently, or which may be purchased for a couple of guineas. These should be kept in an ordinary microscope cabinet, at the side of the working-table on which stands the microscope ready for use when a glass cover is removed. Morbid Anatomy should be represented by slides prepared from tumours and the like which have occurred in the practice; also by these morbid parts mounted in a proper manner, and placed on the shelves of the museum under their pathological or anatomical headings: some of them may be dried, others kept in a wet state, and some can only be represented by models, drawings, or paintings. For accommodation of all diagrams, portfolios should be placed in the different sections of the museum—one for anatomical plates, another for pathological illustrations, a third for botanical plates, a fourth for diagrams of parasites, and so on. With regard to Physiology, it depends largely upon a knowledge of anatomy, chemistry, and histology; its further study must be carried on by observations of animals in health and disease, from diagrams, and from books. A few simple phenomena may be pointed out occasionally to the student, such as rigor mortis, peristalsis, etc. Every opportunity should be taken to make the pupil familiar with the methods of breeding establishments, at which may be obtained fœtuses of various ages, the skeletons of which make very pretty specimens, especially when arranged in series according to their ages, which should be in every case ascertained as nearly as possible, and recorded. A section should be set apart for parasites, duly mounted and arranged on an established system of classification; to this section should belong a number of diagrams and slides illustrating Parasitiology. Monstrosities and examples of variation may be placed in a distinct case, appended to which might be a portfolio containing illustrations of prize animals of different breeds. Calculi may also be systematically arranged in a special case: they should have their history and chemical composition carefully noted in the cata-

logue. Horse-shoes are of sufficient importance and varied enough to render them worthy of a distinct section, being ranged under the headings Historical, Normal, Pathological. Finally, a small portion of the museum should be devoted to Miscellaneous Specimens, but these should be admitted only when they have some interest from a veterinary point of view. We must remember that museum collection is very different from miscellaneous accumulation of strange things. Anything superfluous will be occupying space which can be ill afforded.

Having thus shown how the pupils of a practitioner may be assisted in each branch of their studies by a well arranged and kept practitioner's museum, I shall now notice more briefly the other objects, of which 2, 3, and 10 may evidently be carried out by such an educational arrangement as above mentioned. With regard to object 4, the special features of the practice should be shown not only by specimens and diagrams which should illustrate as many diseases which occur in it as possible, but also by a well-ordered case-book, as kept by pupils under the immediate supervision of the practitioner. Even slight colds, simple Strangles, and such cases which are ordinarily thought trivial, are necessary for correct statistical statements, and may run on to serious disorder. The case-book ought to contain the meteorological records taken from some daily paper and from observations of the thermometer, barometer, etc. Object 5. Epizootics, enzootics, and other outbreaks will be recorded in the case-book, which also will be the place for many important notes; but special cases which the practitioner has thought right to record (object 6) will require some consideration, as to whether the specimens illustrating them shall be retained, or shall be forwarded to one of the schools or to the Royal College of Veterinary Surgeons. We have already seen that under some circumstances each of these courses is possible; but when things cannot be thus arranged the owner of the valuable specimen should first communicate with the curator of one of the central museums, to ascertain whether the specimen has really the value supposed to belong to it. He may receive a reply that there are similar specimens in the central museum, but that the case is worthy of record as being rare, or hardly so, since

such cases are frequently seen in other parts of the country, the practitioner will then without hesitation retain it in his collection. But if the curator desires the piece, a middle course may be adopted, the gentleman thus consulted being supplied with a cast, duplicate (should such turn up), or drawing, and the specimen itself exhibited at a meeting of the local veterinary association, and accurately described, with its history in full, in one of the professional journals. It must not be understood from these remarks that I wish to check the supply of specimens which private practitioners are good enough to forward to the central museums. We curators highly appreciate them, and do our best to make such use of them as shall best advance the interests of science. It is rather my wish to show practitioners that we want good illustrative educational specimens and also rarities, and that it is only with regard to the latter that our interests are likely to clash with theirs, and then only seldom, since our sources of supply are general and universal, whereas theirs are individual and local; and we venture to appeal to their public spirit in the few exceptional cases where we eagerly desire the specimen, that they put it in the central museum where it will be seen by many, rather than in their private collections where it will be accessible only by a few. We seldom appeal in vain! In return we can generally offer exact estimates of the scientific value of the specimen, and we can prove useful when doubtful cases occur in practice, by suggestions during the life of the animal, or critical examination of its morbid conditions after death. This suggests the discussion as to the position "doubtful cases" should occupy in the museum of the practitioner. They are of the greatest value, since they are probably unusual, as they puzzle a duly educated veterinary surgeon, and should be forwarded as soon as possible, as communication or specimen with full history, to the pathologist who is to endeavour to determine their nature. Failing this, they should be subjected to temporary preservation until they can be submitted to the scrutiny of members of a veterinary association at one of their general meetings. The choice of preservatives must be suited to the special case. We cannot stop to enter into this matter now.

Object 7. Almost every practitioner has some special line of

practice, and when he has pursued it for some time must, from his special experience, be considered an authority upon this branch of veterinary science, and so competent to illustrate it by judiciously selected museum specimens. It is here that the private museum presents one of its most important uses, especially if, in due course of time, it becomes the property of the profession by being handed over to the Royal College of Veterinary Surgeons. We are familiar with a recent instance of magnificent liberality of this kind. Object 8. The value of having specimens illustrative of disputed cases is evident: as long as the profession exists there will not be exact concord between its members in matters of scientific opinion. A neatly prepared specimen will prove a valuable ally as circumstantial evidence in a court of law or at a professional meeting.

Object 9. We all have our own ideas on certain subjects, and where these are based on experience or correct reasoning they are worthy of consideration, as containing some grain, even though it be intermingled with a very great deal of chaff. Our peculiar ideas very frequently require to be elucidated by reference to specimens such as should be found in private museums. Our papers, as read at scientific meetings, should form one or more bound volumes, to be constantly found with the case-book and catalogue in the museum. These should be "co-ordinated" by cross references, thus :—

*Case-book.*—Number 20, 5/11/80: (See Catalogue, No. 5, p. 3), and (Paper on "Bacteria," p. 10).

*Catalogue.*—P. 3, No. 5: (See Case-book, No. 20, 5/11/80) and (Paper on "Bacteria," p. 10).

"*Bacteria.*"—P. 10: (See Catalogue, p. 3, No. 5), and (Case-book, No. 20, 5/11/80).

The catalogue, as well as the case-book, should be kept by the pupil under the eye and control of the practitioner or of his qualified assistant, the entries to be made daily. The catalogue, of course, must be arranged according to the museum system: some practitioners will prefer one way, and some another. I append an outline of that which I have adopted for the museum of the Royal Veterinary College, which I find works well, as admitting of any amount of extension (see Appendix No. 2).

In the arrangement of the specimens in the cases a certain intermingling of wet with dry occurs, but this is not unsatisfactory. The order of the catalogue must not be slavishly adhered to in arrangement, but some regard must be paid to appearances, though every specimen must be near where the catalogue would lead any one to expect to find it. Each entry should comprise—1, nature of the specimen; 2, donor; 3, preparer; 4, the special points of interest of the specimen; 5, its history; 6, the mode of preparation adopted (this being of importance in repairing).

Very few glass cases will at first be required, for the majority of specimens can equally well be kept on shelves which involve less labour and expense. A little dust will not hurt any but the finest of specimens, and even the entry of this may be considerably prevented by blinds extending from shelf to shelf, and arranged so as to spring up with rapidity and readily, like those in the better class of railway-carriages. Dust-proof cases may be gradually added, to contain the more showy specimens. The shelves must vary in distance from one another, and have a width of about one foot. Hooks may be fixed in their under surfaces, for the suspension of objects which can best be exhibited in this way. No difficulty ought to be experienced in getting such shelves of a standard size, movable, and in frames which could be fitted against the walls of any room, and for convenience of transportation could, on emergency, be united in pairs to form boxes.

I have attempted some diagrams of what I should consider a first-class private practitioner's museum; these I must ask you to examine rather as to design than execution, since I have been my own artist. You will see from the ground plan that the room of the largest scale would require to be 32 feet by 24; the height would be about the average of rooms of this size. You will also see from the plan that this may be used as an instrument-room, and also for the reception of surgical appliances, also as library and study, chemical laboratory, class-room, and biological laboratory, if necessary. It could be fitted up with a work-table, large writing-desk, chemical experiment table, fire-place, flat cases, wall-shelves and glass cases, extra table, cupboards, portfolio-

cases, etc. It gives 136 feet of room for ordinary specimens; 2¾ square feet of flat case room; room for two doors, one 3 feet wide, the other 6 feet; also for two windows, each 6 feet wide.

Such a museum would prove ample for an agricultural school, for an important army station, such as Woolwich, Aldershot, or Dublin, or for the establishment of an influential city practitioner. For others the smaller-sized room, 24 feet by 18, would suffice, with the same arrangement; or the plan might be compressed to fit almost any room, by omission of flat cases, loss of one door, or a window, or both, or some other such measure. Let any practitioner think of a spare room, and, design in hand, examine its capabilities, and he will soon find that it is not a matter of difficulty nor of much expense to convert any moderate-sized room into a creditable museum.

Our great aim in such a museum as I have been describing will be to make everything accessible and in its right place, as well as specially illustrative. The writing-desk is capacious and wide; it may contain labels, ink of various colours, and all matters necessary for correspondence; also paints, chalks, and other materials for artistic work, which, however rough, is of the greatest value to the practitioner who aims at a good illustrative museum. Any modelling may be carried on at the chemical table, which also will be available for mounting the specimens. This should be furnished on some such system as is given in Appendix 3. And the microscope or work-table also may be supplied with some such means and appliances as are mentioned in Appendix 4. These are ample for all ordinary requirements.

We need not enter into details with regard to the collection of books: the space to be allotted to these will not require to be large, to accommodate all the strictly professional works of most veterinary surgeons. Special rests will be required to support the portfolios in the various sections.

With regard to the stove, some of the American forms so much in use now, might be used, especially one of the kitcheners with oven, boiler, and other accessories, all of which will be found of use in conservation. Warmth is one of the most essential conditions for a museum.

Weights and scales will, of course, belong to the chemical section.

As an accessory of the museum we must have a *drying-room.* The essentials for this are lots of draughts, some warmth, dryness, and careful precautions against cats and rats, who are particularly fond of investigating museum preparations. Most lofts will be available for this purpose; the beams will do for suspending, and especial care must be taken to constantly inspect this place, that it be kept free from moulds, and from those insecta which are the curator's bitterest foes.

An *ordinary boiler-house or scullery* will be another necessary, and open *macerating tubs,* with wire coverings, will also be required. The drying-room may contain pans for specimens which are bleaching in chloride of lime solution, or which are being temporarily preserved in spent spirit until a leisure hour. All the refined details of conservation can be carried on in the museum and pharmacy. Where intervals occur on the walls of the museum, may be suspended, for ready reference, *maps* of the world, Europe, England, and of the geology of the special district, and with them such useful *charts* as Morton's "Toxicological," Williams' "Contagious Diseases"; also Varnell's "Map of the Arteries," and the sheets illustrating anatomy and conformation, the description of which has been translated from the French by Fleming. Having thus, I hope, convinced you, and established my opinion that every private practitioner ought to have a museum, and described what I think ought to be the general style and scope of such an appendage of a veterinary establishment, I must now answer the argument *that such a museum as I have described would cost more money, time, and labour than it would be worth.* This is a decided mistake. The ordinary work of museum conservation is especially well adapted to fill up spare minutes. Much time now lost in idleness might be well spent in this way. Also, the work is such that it may, without detriment, in so far as it is prolonged or otherwise exacting, be deferred until the slack season of the year. The ordinary every-day conservation work may be performed by ten minutes' instructions from the teacher, and an hour's work daily

by the pupil. But, we may be told, all pupils will not work at such things; but this is a very poor argument from the mouths of those who undertake to train young men to a profession so varied in its duties as ours is, and who have ample powers accordingly. The benefits to be derived from this work are most substantial, and very few pupils will fail to appreciate its importance if this be put to them in its proper light. That a practitioner can do this museum conservation is proved by the fact that JOHN HUNTER, during the years when he had excessive work as a leading London practitioner, and senior officer at one of the largest metropolitan hospitals, found time to collect and prepare the nucleus of that grand museum which may be seen in Lincoln's Inn Fields, an ornament to this country, an honour to the College of Surgeons, and the noblest possible memorial of its great originator. We may all follow this great "curator of curators," even though at a humble distance, and with results insignificant as compared with his.

With regard to the *trouble and skill* required, I speak from experience when I say that these have been much exaggerated, and that very much may be done without preliminary training; and in doing this, experience will be gained such as is necessary for further work. Undoubtedly some care and consideration is required, but the result will prove more than compensatory for this.

The *expense*, also, need not be great; and it must be remembered that money spent in this way will be well invested. Also, there is no great preliminary outlay, for the requisites may be brought together gradually. We are all accustomed to leave many things lying about which, if kept in such a room as I have described, would not become spoilt by filth or rust, or else be lost or stolen. The number of useful instruments and small packets of valuable seldom-used drugs, to say nothing of valuable pathological and anatomical specimens, thus annually lost in some establishments, is astonishing: here our museum system would actually prove an economical process.

The *division of the museum into sections* ought to be strictly observed, since "order is gain." Though the number of speci-

mens in any one section be very small, there will be a nucleus as a rallying centre for any allied matters which turn up. We shall thus be able with facility to determine where to put a new specimen, or to find an old one.

*Inexpensive appliances must be used as much as possible*, such as ordinary phials instead of expensive glass jars, and various preservative mixtures in place of rectified spirit and glycerine. These measures will be economical rather than mean, since the results will be equally good.

The *rooms* required will be generally found in veterinary establishments—a lumber-room and a loft, for instance. The former as museum, the latter as drying-room. I have already shown how my scheme may be adapted. The general principles which I have enunciated are fixed, but the details are capable of adaptation to circumstances.

I have not suggested that you should do *all* I say, but as much as your special circumstances permit. If you work quietly, but with a sustained purpose, the result will greatly exceed your expectations. Though my scheme is but a theory, it is based on my experience of what is necessary and what is feasible. If I have succeeded in convincing some of you that I am dealing with a matter, attention to which should be considered by each practitioner a duty which he owes to himself, his pupils, and the profession, I shall be well satisfied, for I am convinced that I have dealt with a matter of much importance, which has been for too long a time neglected. Many a practitioner who now has a museum which is a credit to himself, may derive from this paper some hints which will assist him, for *there are already good practitioners' museums*, but not so many as there should be; for each member of the profession may, in his degree, take part in such a work as this.

It has not been my design in this paper to describe methods of preparation; but if the society consider this matter sufficiently important for and suited to their deliberations, I shall be happy to treat of that important subject on some future occasion.

## Appendix I.

*System of Museum Arrangement as carried out at the Royal Veterinary College of London.* (Specimen Sheet.)

CASE I.—*Odontology.*—Shelf 1. Teeth of the Pig. Specimens 1—75.
(1—230.) „ 2. „ Sheep. „ 75—100 and 100—150.
„ 3. „ Ox. „ 150—200.
„ 4. „ Horse. „ 200—220.
„ 5. Abnormal „ 220—225.
Floor. Miscellaneous „ 225—230.

CASE II.—*Osteology*—Shelf 1.
and *Arthrology.* „ 2.
(Normal.) „ 3. } The Vertebral Column. Specimens 290—350.
„ 4.
„ 5.
„ 6.
Floor. } General Osteology. Specimens 231—290.

*Specimen.*

EXAMPLE 337.—Dorsal Vertebræ of a Horse. Presented and prepared by Prof. P., Jan., 1860.

337 (*a*).—Ditto of a Retriever Dog (Male), Adult. Presented and prepared by J. H. Steel.

337 (*b*).—Ditto of a Pig—Improved Sussex Breed—(Female), Three Years. Presented and prepared by J. H. Steel.

337 (*m*).—Ditto of a Domestic Fowl—Cochin China Breed—(Female), Adult. Presented and prepared by J. H. Steel.

CASE III.

CASE IV.—*Fractures.*—Shelf 1. Of Bones of the Fore Extremity.
„ 2. „ Hind „
„ 3. Of Vertebral Column.
„ 4. Of Skull.
„ 5. Miscellaneous Fractures.
„ 6. Dislocations, etc.
Floor. Ditto.

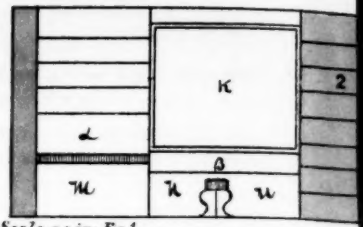
*Specimen.*

EXAMPLE 624.—*Fracture of Base of Cranium* by "Counterstroke," *caused* by the animal over-rearing and falling on the Crest of the Occiput. Presented in preserved state by J. Wright, Esq., of Burnham Ovary, Norfolk, 1850.

NUMBERS & LETTERS AS BEFORE
EXCEPT

M. *Cupboard for Preservative Solutions.*
N " " *Papers & documents*
O " " *Injecting apparatus &c.*
P " " *Microscopic cabinet.*

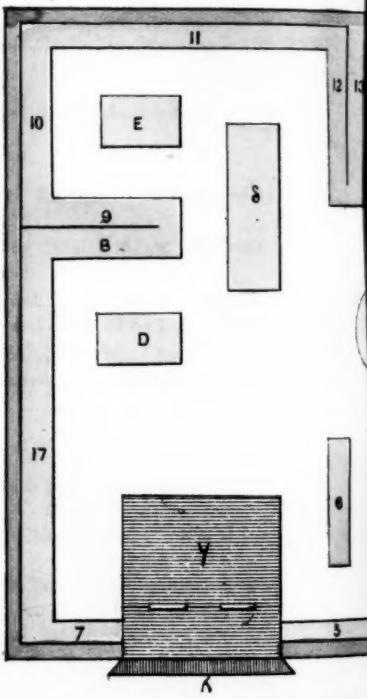
*The Chemical & Working Tables are shown in their relations to the Shelves.*
*The Writing desk also in position*




*Scale as in Fig 1.*

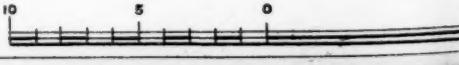
VIEW FROM WITHIN OF

THIS BUILDING IS ALSO ADAPTED
*to do duty as*
*An Instrument Room,*
*A Room for Surgical Appliances,*
*A Library & Study,*
*A Chemical Laboratory,*
*A Biological Laboratory,*
*A Class Room, &c.*



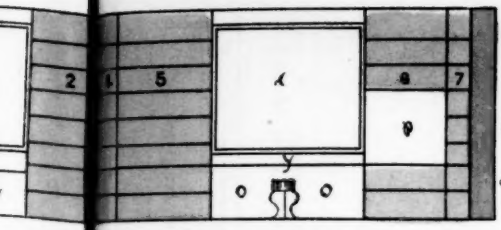

GROUND PLAN OF A PRACTITIONER'S MUSEUM

SCALE OF



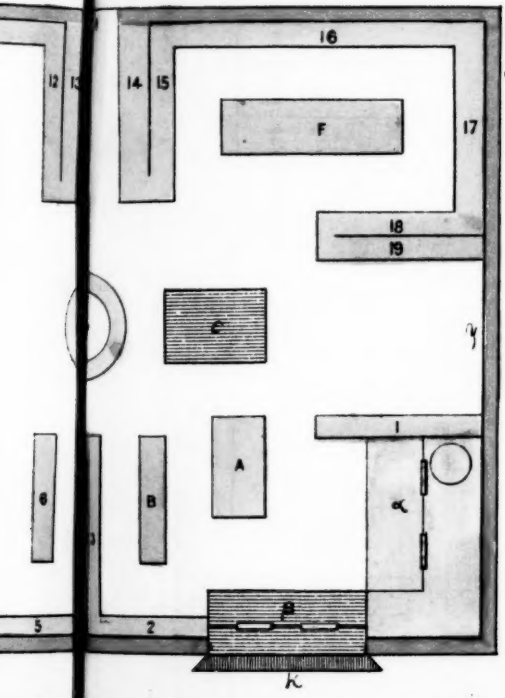

Wilday, Lith: 9, Castle St Holborn, London.

g. 2.




ITHIN O OUTER WALL OF THE SAME.

g. 1.




**DESCRIPTION.** *SPECIMEN CASES IN BLUE*

*Section (a)* 1. *Materia Medica Cabinet.*
2.
3.
*Section (b)* 4.
5.
6. *Book Case.*
7.
8.
*Section (c)* 9.
10.
11.
12.
*Section (d)* 13.
14.
*Section (e)* 15.
16.
17.
18.
*Section (f)* 19.

**FLAT CASES.**

A.
B.
C.
D.
E.
F.
G.
H.
α. *Chemical working departm^t*
β. *Writing desk.*
γ. *Working table.*
δ. *Skeleton &c.*
ε. *Small Table with Scales &c*
ζ. *Fireplace.*
η. *Door to Pharmacy.*
θ. *Door to drying room.*
κ. *Window.*
λ. *Window.*

MUSEUM F FULL SIZE WITH AMPLE ACCOMMODATION.

SCALE OF FEET.

0 20 30 FEET

## APPENDIX II.

*Tabular Record of Examinations as to Soundness, from June, 18—, to January, 18—.* (Half-yearly Record.)

**Total number of Horses examined, 92.**

| Colour. | | Age. | | Sex. | | Class. | | Results of Examinations. | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Chestnut ... ... | 25 | 4 years | 19 | Mare ... | 11 | Hunters, Hacks, etc. | 78 | Diseases of Resp. Organs | 25. = | About 26 % |
| Bay ... ... ... | 31 | 5 years | 27 | Gelding . | 81 | Cart ... ... ... ... | 8 | ,, Hind Limb | 36. = | ,, 40 % |
| Brown ... ... ... | 20 | 6 years | 22 | Stallion . | 0 | Cobs... ... ... ... | 6 | ,, Fore ,, | 36. = | ,, 40 % |
| Dun ... ... ... | 4 | Aged. . | 18 | | | | | ,, Foot ,, | 22. = | ,, 23 % |
| Grey ... ... ... | 8 | 2 years | 2 | | | | | ,, Eye | 2. = | ,, 2 % |
| Roan ... ... ... | 2 | 3 years | 4 | | | | | ,, Teeth | 1. = | ,, 1 % |
| Black ... ... ... | 2 | | | | | | | Sound | 13. = | 14.2 % |
| Pie-and Skew-bald | 0 | | | | | | | | | |
| Other Colours ... | 0 | | | | | | | | | |
| Total | 92 | | 92 | | 92 | | 92 | | | |

*Tabular Record of Diseases and Defects of above Animals.*

| Diseases of Respiratory Organs. | | | | | | | | Diseases of the Eye. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Temporary. | | | | | Permanent. | | | Temporary. | | | | | Permanent. | | |
| Cough | Sore throat | Catarrh | Pneumonia | Pleuritis, &c. | Roaring | Thick wind | Broken wind | Conjunctivitis | &c. | | | | Cataract | | |
| 8 | 5 | &c. | | | | | | | | | | | | | |

And so on.

Signed,

X. Y. Z., M.R.C.V.S.

## Appendix III.

*Furniture of the Chemistry Table of "Practitioner's Museum." (After the design described in the "Students' Magazine," and "Science and Art," 1st September, 1877.)*

*Reagents arranged in alphabetical order on the shelves.*

1. Alcohol.
2. Ammonic carbonate.
3. „ chloride.
4. „ hydrate.
5. „ nitromolybdate.
6. „ oxalate.
7. „ phosphate.
8. „ sulphide.
9. „ nitrate.
10. Argentic nitrate.
11. Auric chloride.
12. Barytic carbonate.
13. „ chloride.
14. „ nitrate.
15. Borax.
16. Calcic chloride.
17. „ hypochlorite.
18. „ sulphate.
19. Chlorine water.
20. Cobaltic nitrate.
21. Copper (foil and filings).
22. Cupric sulphate.
23. Ether.
24. Ferric chloride.
25. Ferrous sulphate.
26. Hydric acetate.
27. „ chloride.
28. „ fluosilicate.
29. „ nitrate.
30. „ sulphate.
31. „ sulphate and water.
32. „ sulphide.
33. „ sulphite.
34. „ tartrate.
35. Hydropotassic sulphate.
36. Hydrosodic sulphite.
37. Hydrosodic tartrate.
38. Indigotic sulphate.
39. Lime water.
40. Magnesic sulphate.
41. Manganic peroxide
42. Mercuric chloride.
43. Mecurous nitrate.
44. Platinic chloride.
45. Plumbic acetate.
46. „ peroxide.
47. Potassic chromate.
48. „ cyanide.
49. „ dichromate.
50. „ ferricyanide.
51. „ ferrocyanide.
52. „ hydrate.
53. „ iodide.
54. „ metantimoniate.
55. „ nitrate.
56. „ sulphocyanide.
57. „ mercuric iodide.
58. Sodic carbonate (solid).
59. „ (solution of ditto).
60. „ hydrate.
61. „ phosphate.
62. „ phosphomolybdate.
63. „ ammonic phosphate.
64. Stannous chloride.
65. Starch.
66. Test metals.
67. Test papers.
68. Zinc pure.

*Apparatus.*

Bunsen gas-burner.
Retort stand.
Trellis.
Brass tongs.
Blowpipe.
Three funnels.
Box of filters.
Glass disk.
Two flasks.
Two stirrers.
Six platinum wires.
Two pieces platinum foil.
Charcoal, with wire-holders.
Crucible tongs.
Three porcelain basins.
Two watch glasses.
Test-tube stand, with twelve tubes.
Six arsenic tubes.
Stoppered retort.
Washing bottle.
Spring tube-holder.
Marsh's apparatus.
Carbonic acid tubes.
Wood block.
Filtering paper.
Test-tube brush.
Water-tap and basin.

To these might be added weights and scales, and a spectroscope, with the necessary appliances.

APPENDIX IV.

*Furniture for a Biological Working Table. Adapted also for Pathological investigations. After the design described in the "Students' Magazine," and "Science and Art," for September 1st, 1877.*

*Apparatus and Reagents for Botany:—*

Microscope, 2 in. to ⅛ in. objectives.
Dissecting microscope of two powers.
Two pieces of glass rod.
One pair of forceps.
One pair of scissors.
One dissecting needle.
Six sheets of glass, 3 in. by 1 in.
Box of microscopic glass.
Two camel-hair brushes.
Two watch-glasses.
A few filters, and the following liquids and solutions:—
Iodine.
Carmine.
Chromic acid.
Bichromate of potash.
Creasote.
Clove oil.
Magenta.
Distilled water.
Logwood.
Glycerine.
Acetic acid.
Alcohol.
Common salt.
Potassic hydrate.
Turpentine.
Canada balsam.

*Apparatus and Reagents for Zoology:—*

All the reagents at the Chemical Table.
A bottle of gum.
A basin, with a piece of cork loaded with lead to fit the bottom.
A box of common pins.
Scalpels and several forceps.
And others as for Botany.

To these might be added chain hooks, tenacula, probes, and blowpipes, saw, chisel, mallet, wood blocks, props, and a Pravaz syringe. Also injection syringe, and several taps, and the mercurial injection tube.

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## THE EFFECTS OF LIGHTNING UPON ANIMALS.*

BY G. A. BANHAM, M.R.C.V.S., BROWN INSTITUTION, LONDON.

THE subject I have to lay before you to-night is, I think, of such importance that no apology is needed for introducing it to your notice. I may, however, say that veterinary literature is very deficient in facts bearing upon it; and that if a practitioner should be called upon to give an opinion in cases of lightning stroke, and find himself in any difficulty, he could obtain but little assistance from our text-books or periodicals. As I have been so situated myself, I naturally endeavoured to collect all the information I could, bearing upon it, for future reference, and

* Read before the Norfolk and Eastern Counties Veterinary Medical Association, January 24th, 1881.

have attempted to arrange the facts I have obtained in such a manner as to make them intelligible to the members of this society, with a view of eliciting their opinions and experiences—which I expect must be considerable, after the storm we experienced in this and other parts of England in August, 1879. In the first place I have to thank my friends Mr. Ward, F.R.C.V.S., for much valuable information obtained from French authors, and Mr. Fleming, F.R.C.V.S., for the records of many cases narrated by foreign writers, as well as for the loan of some books from which I gathered much useful information. I have appended a list of the works from which I have obtained extracts, for the benefit of those members who care to investigate the subject further.

I propose, *firstly*, to give you a few of the common laws with regard to electricity in general; *secondly*, to point out its physiological action on healthy animals; *thirdly*, to give you the current views respecting atmospheric electricity and its phenomena; *fourthly*, to expound the effects of its discharge on inanimate things; *fifthly*, its effects on animals; *sixthly*, the lesions usually found; *seventhly*, to point out that death may be produced without any external signs whatever; *eighthly*, to explain, as far as I am able, the various phenomena; *ninthly*, to demonstrate that death occurs from shocks to the system produced in other ways than by the electric fluid; and *finally*, to recapitulate most of the important conclusions that may be derived from this study.

With these preliminary remarks, we will pass on at once to consider

## Electricity.

The word "electricity" is derived from the Greek ηλεκτρον, meaning *amber*, from the fact that amber, when rubbed on silk, attracts light bodies. In the sixteenth century Dr. Gilbert showed that many other substances, such as sulphur, sealing-wax, and glass, possessed similar properties.

"Electricity" is the name given to the attractive powers produced by rubbing bodies together.

It can be called into activity by mechanical power—friction, chemical action, and magnetic influence. In fact, we can detect

its presence, either as cause or effect, in almost every physical action with which we are acquainted.

If glass is used, the attractive power is found to be localized to the spot rubbed; but if a metal rod be attached to it, we find the influence spreads over the whole surface of the metal rod, and is not localized, as is the case with the glass. This fact is expressed by saying that glass is an *insulator* or *non-conductor*, whereas the metal is a *conductor*. But it must be remembered that the difference between conductors and non-conductors is not abrupt, and that the worst conductors do, to a certain extent, convey electricity, and under certain conditions may even become conductors; and even the very best conductors present some resistance to the passage of electricity.

There are two kinds of electricity: *positive* or *vitreous*, or that excited by rubbing glass; and *negative* or *resinous*, or that excited by rubbing sealing-wax.

It is found that bodies charged with either one kind or the other repel each other; but if one body is charged with negative, and the other with positive electricity, they attract one another. Hence the law, "*Like electricities repel one another, whereas opposite electricities attract each other.*"

Moreover, wherever one form of electricity is produced, there is always just as much of the opposite kind also produced; therefore the law that "*one kind of electricity never appears without the other.*"

The nearer two electrified bodies are to one another, the stronger is their attraction or repulsion, as the case may be.

We have said that electricities of like kinds repel one another; consequently we only find the *surfaces* of bodies manifest electricity, and this would escape from them if it were not prevented by the surrounding atmosphere, which when *dry* is a very bad conductor. But in the moist state it will conduct electricity; and hence it is that the electricity produced by stroking the cat's fur is only perceptible to us in dry frosty weather, for it is conveyed away, and escapes our perception as soon as it is generated, by the air in moist weather.

The rate at which the electric fluid travels is, according to Sir C. Wheatstone, greater than that of light; for he found that it

travelled at the rate of 288,000 miles per second along an insulated wire.

The combination of two opposite electricities is often sudden—especially that produced by friction—and accompanied by a flash of light and heat. At other times it is of longer duration, as that produced by chemical action. These discharges may take place across any kind of interjacent matter, gaseous, liquid, or solid. When the interjacent matter is solid it is either shattered, cracked, or pierced by the disruptive action, and permanently unfitted for the repetition of a discharge through its mass.

The duration of the electric spark Sir C. Wheatstone found to be about the $\frac{1}{24000}$ of a second.

Before passing on to atmospheric electricity, it will be well to consider for a few moments

*The Physiological Effects of Electric Discharges.* The discharge of a Leyden jar battery* may perhaps be compared, says Prof. Balfour Stewart, to that of a cannon-ball from a field-piece, while a voltaic battery may be likened to a machine which keeps perpetually discharging enormous quantities of small shot. The effect of one is sudden and awe-inspiring; the other is continuous, and of a comparatively quiet nature.

The quantity of electricity may not be so great in the case of the Leyden jar as in the battery, but its effects upon animal life are much greater. This is due to the fact that the battery requires a longer time to generate the same amount of electricity; thus, if an animal were subjected to a strong voltaic current for any length of time, it would be destroyed.

The effect of an electric shock varies with the strength of the discharge and the susceptibility of the animal. It may be felt in the hands only, or it may extend to the arms or chest, and if stronger death may be the result. It requires no very powerful charge to kill mice, birds, rabbits, and other small animals, and in many experiments discharges are employed that would be sufficient to destroy any animal, as the following extract from the *Daily Telegraph* shows :—

"An accident of an extraordinary nature occurred last night

* For a description of this, see Balfour Stewart's "Elementary Physics."

at the Holte Theatre, Aston, near Birmingham. The stage was lighted by two electric lights, and when the candles are not burning two brass connections used for the purpose of crossing the current are hung up over the orchestra. After the performance of the pantomime, Mr. Bruno, the euphonium player, was leaving with the other members of the band, when, presumably out of curiosity, he caught hold of the two brass connections referred to. The man in charge called out to him, with the object of warning him of the danger he was incurring. The caution, however, came too late. Mr. Bruno received the full shock of the electric current, generated by the powerful battery which supplies the whole of the lamps in the building and grounds. The shock rendered him insensible. A medical man was at once sent for, and restoratives were applied, but Mr. Bruno died in about forty minutes afterwards."

Some years ago Dr. B. Ward Richardson and Dr. Sedgwick conducted some experiments* with a battery consisting of forty-eight Bunsen's cells, connected with a large induction-coil weighing 15 cwt.; the primary coil being 3,770 yards long, and the secondary wire 150 miles, with a central core or case of soft iron wire, 5 ft. long and 4 in. in diameter, and 125 lbs. in weight. They found—1st, that when the secondary wire was simply charged from the primary wire a spark of 29 inches long and of some thickness was obtained. It was composed of two parts—a line of thin blue tense flame, surrounded by a thick burning flame. 2ndly. When the break or vibrator was used they obtained a spark 10 or 15 inches long—blue, intense, forked, and almost continuous. 3rdly. When a Leyden battery (of 40 square feet) was charged from this coil by three discharges a most dangerous and fatal kind of artificial lightning was obtained. With reference to the effects of these various sparks upon animals, Dr. Richardson found that the first kind did not injure them very much: it only singed the feathers or fur of pigeons and rabbits. A frog took twenty-five, a pigeon fifteen, and a rabbit thirty discharges, without being killed; and it was even sent right through the body, showing its comparative harmless-

* For an account of these, see the *Medical Times and Gazette*, May 11 1870.

ness. The second was more powerful, producing more or less permanent contraction of the muscles; and when passed through the body its effects were still more powerful, but death seldom occurred. The third kind, from the Leyden-jars, was more deadly: one or two discharges, when passed through the body, were found to be fatal.

The *Farmer* for December 15, 1879, says "that electricity, in the form of a Rhumkorff coil, has recently been introduced in the neighbourhood of Marseilles for the purpose of killing birds. Instead of smearing the trees with *bird-lime*, they are embraced by a copper wire, and a decoy bird placed on the top of a tall mast near at hand. When travellers have perched in sufficient numbers upon the treacherous supports, the *sportsman* on the watch makes contact with the poles of his battery, and the birds fall to the ground stunned, and are collected before they have time to recover. If the battery be a powerful one, they are probably killed outright by the shock."

Electricity, whether generated in animals (as in the electric eel), by the ordinary electric machine, or in the atmosphere, is the same, and only varies in each case in degree. Franklin was the first to prove that lightning was only a manifestation of electricity on a large scale, and he did so by collecting sufficient electricity from the clouds to charge a Leyden jar.

*Atmospheric Electricity.*—We have seen that electricity is invariably produced in bodies whenever the particles are shaken, or separated by friction, percussion, heat, light, or chemical action. Now this same separation of the electricities appears an essential element of relation between the earth and the atmosphere, the latter manifesting positive force, and the former negative.

*The Origin of Atmospheric Electricity* is a question which is still under debate, but the following suggestions have been made: 1st, that evaporation plays an important part; 2nd, that the innumerable chemical actions that occur may be its source; 3rd, friction produced by winds; and 4th, that heat may have something to do with it, for it is known that the unequal distribution of heat in a heterogeneous metal suffices to separate the electricities, the portions which are most heated taking the

negative, and those which are least heated the positive electricity. It is not improbable that we ought to consider the earth and atmosphere under this relation. The higher parts of the atmosphere, because of their rapidly diminishing heat, ought to become more and more positive, while the earth should show an increasing negative intensity downwards to its centre. This explains the fact, too, of the greater separation and display of electric forces in the tropical regions, for there the foregoing contrasts are the greatest. The intensity of these phenomena naturally diminish as we pass towards the temperate zones; and it may be that the polar regions—where the aerial gradation of heat is comparatively inconsiderable—serve as a point of reunion to the polar forces disengaged elsewhere; and it may also be on this account that the northern regions are the theatre of the brilliant displays known as the *aurora.*

Although the rule is that the earth is negatively, and the atmosphere and clouds are positively electrified, still there are exceptions. For instance, Peltier tells us that he found by means of a kite that the atmosphere was positively electrified through the first zone of sixty yards; above that it was negative for twenty-five yards, while beyond this positive indications reappeared.

*Origin of Positive Electricity in Clouds.*—Moist air (clouds) is found to take up electricity from electrified bodies. Clouds would therefore attract and store up all electricity from bodies with which they come into contact. If a cloud is formed in a tranquil atmosphere, in its natural or positive electric state each of the vesicular (vapour) globules would be in the same electric condition. If the electricity is feeble, and the particles of the vapour considerably apart, nothing remarkable will follow. If, however, the particles become closer to each other, *i.e.*, the cloud becomes denser, then all the electricity of its interior will, according to the laws of electric distribution, collect itself on the surface of the cloud, where it will be retained by the pressure of the surrounding air. A storm cloud thus formed ought manifestly to contain as much electricity as the whole mass of air that furnished its vesicles; so that, however feeble the general atmospheric tension at the time, it is easy to see that the elec-

tricity at the surface of a cloud (from its size) may acquire an enormous tension, and be prepared to take part in the stupendous action of a thunderstorm. When these storm clouds are driven onwards by the wind they lose their charge during their passage, and become inert.

*Origin of Negative Electricity.*—As Peltier and others have shown, clouds may be negatively electrified, although it does not seem to be an easy task to account for this. The most probable cause that I can find is that clouds rising directly from the ground transport the negative electricity with them. It is not improbable also that clouds become negatively charged by influence or induction. There is no reason to believe that a dense cloud of powerful positive tension may not act upon another cloud, either feebly electrified or not electrified at all, and in communication with the earth. The positive electricity of the latter would be driven into the earth (according to the law that like electricities repel one another), and a negative charge would be developed in that portion of it nearest the positively electrified cloud. Should communication with the earth be now cut off, the cloud would be in a negative state.

Berard, describing the appearance of some violent tempests near the coast of the Gulf of Mexico, says that almost always before lightning was seen or thunder heard an irregular column was observed to rise with astonishing rapidity from the centre of the cloud; and when the cloud was examined with a telescope there appeared to be a great movement in its interior, like smoke rolling on itself, and suggesting to the imagination the struggles of an elastic fluid in its interior, endeavouring to escape.

Storm clouds are found at all elevations. Humboldt records cases where effects of lightning were seen 15,000 feet above the level of the sea; and Arago informs us that clouds of high tension have been discovered 26,650 feet above the lowlands of the temperate zone. But they are usually low—from 3,000 to 5,000 feet above the sea's level.

*Cause of Storms.*—Storms seem to be due to either one of the two following causes:—1st. An ascending current of vapour, which, whilst passing into a colder region, undergoes rapid con-

densation. 2nd. Two currents of air, from different quarters and in opposite electric states, meeting each other.

The first is probably their cause in summer, the latter in winter. Although the rapid condensation of vapour is not always productive of thunder-storms, yet such condensation is invariably accompanied by the evolution of electricity. In our climate storms generally occur in hot weather, and they are more frequent in hot than in cold countries. It also appears that an oceanic atmosphere is less favourable than a continental one to the generation of such storms.

*Lightning.*—We all know that a spark can be passed between the poles of a battery, and that it is used for various practical purposes, such as to explode mines, to ignite gas, and it is now being tolerably successfully utilized as the "electric light" to supersede gas.

Just as the spark produced between the poles of a battery is due to the intermediate air being heated to incandescence, so is lightning the spark or illuminated air of an electric discharge, either from cloud to cloud, or between the clouds and the earth. If lightning were analyzed by means of the spectroscope, it would reveal the chemical nature of the substances through which the discharge had passed.

*Kinds of Lightning.*—We can distinguish three kinds of lightning:—

1. *Sheet Lightning*, or that which, spread over a considerable extent of sky, is due to a discharge inside the clouds, the light suffering reflection and diffusion. This kind does not appear to have any very great tension.

2. *Forked, or Zigzag Lightning* is that due to a discharge either between two clouds or between the clouds and the earth. It is made up of straight lines and sudden bends.

3. *Ball Lightning, or Fire-balls*, are said to fall slowly, *i.e.*, in about ten seconds, and then roll or rebound and explode violently; but no very exact observations seem to have been made regarding this form.

There is also another kind, called *Summer, or Heat Lightning.* It is unaccompanied by thunder, and seems to be the reflection, from aqueous vapour and clouds, of a discharge occurring beyond

the horizon; or it may be due to a discharge at such a great elevation that the thunder cannot be heard.

*Duration.*—Arago has shown that lightning of the first and second classes does not last for the 1,000,000th part of a second.

*Colour.*—The colour of lightning varies with the state of the atmosphere. It is usually of a dazzling white, but when the air is rarefied it has a violet tint.

*Course taken by Lightning.*—The law concerning the course which lightning takes, is that it follows the direction in which least resistance is offered to its passage. It will, however, leave a long and tortuous, though good conductor, for one which, though less perfect in itself, presents a more direct, and therefore more rapid route.

If lightning meets with bodies that are bad conductors, it pierces, breaks, or scatters them, and destroys animal life.

*Fulgurite.*—When lightning passes into the earth, its contact with siliceous substances often produces fulgurite.

*Return Shock.*—I must confess I do not myself thoroughly understand what is really meant by the so-called "return shock." I can only state what I have been able to find on the subject, and ask you to take it for what it is worth. One writer says, "Objects may have been charged with electricity by induction of the clouds. This electricity is suddenly set free by a distant discharge, so that it passes through the objects to the ground. Men and animals have been killed in this way." Another says he witnessed the lightning move from the earth to the clouds.

*Thunder.*—Thunder is the sound produced by a discharge of atmospheric electricity. It is probably due to the sudden expansion, by heat, of the air, producing a multitude of sonorous waves. The discharge not only generates a great quantity of heat, but also reduces the aqueous vapour which it heats to its gaseous elements. This ultimate decomposition cannot be produced instantaneously without being accompanied by an explosion. The noise of thunder is often prolonged by terrestrial echoes, and it is in the deep ravines of mountains that we should hear the rolling peal as it reverberates from side to side of their rocky walls.

*Distance of a Storm.*—Sound travels at the rate of 1,100 ft. per

second, whilst the passage of light is almost instantaneous. Hence it is that we always see the flash of light before we hear the report; and it is said if we divide the number of seconds elapsing between the flash seen and the report heard by five, it gives us the distance to the place of discharge approximately in miles.

*Heat Produced.*—The calorific power of lightning no one will, I think, venture to question, for we can demonstrate it with the battery. Metals can be made red hot, and even volatilized. Metallic substances found on persons and objects struck by lightning have presented traces of fusion. Glass goblets have been known to show signs of having been submitted to the action of intense heat, which had melted without cracking them. They were made, says one writer, of glass rich in oxide of lead, and were consequently rather better conductors than ordinary glass.

(*To be continued.*)

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## THE USES OF THE PAPAYA-TREE IN VETERINARY MEDICINE AND SURGERY.

BY J. H. COX, M.R.C.V.S., ARMY VETERINARY DEPARTMENT.

THE properties of the juice or sap of the above tree have for some time been known to possess specific properties; but so far as my knowledge and research go, it has never assumed a prominent position in the treatment of disease. Therefore I venture to offer a few remarks on its action. Any little hesitancy as to its adoption that presented itself to me, was speedily overcome by the perusal of a paragraph in an Indian daily paper as follows :—"I have again met with something new about the papaya-tree. A short time ago I reported that in the West Indies meat is wrapped in papaya-leaves to make it tender. Now I see that a Frenchman, on examining the white milky fluid present in the stem, fruit, and leaves of the papaya, has found that this sap works like *pepsine*. Albuminous substances are consumed by it. It also attacks living tissues, so that the experimenter has tried it on living animals. He has thereupon injected it into hardened swellings, which caused great pain, accompanied by fever, but very soon made the hard

swelling soft, after which they were cut into, and cure followed. Into a mixture of four parts water and one part papaya sap he also put a frog, of which, after two days, nothing but the skeleton remained. All the flesh had been digested in the bottle, just as it would have been in a stomach. After this it is surprising that now that people know of so many plants which feed on flesh (that of insects, etc.), the papaya, which possesses such a flesh-consuming sap, has nó means of catching those insects it might so well feed upon."

After reading the above, it occurred to me that the juice of this fruit, or indeed any part of the tree, might be turned to good account in veterinary surgery. My numerous duties prevented me from carrying out experiments on as large a scale as I should have wished, but if the subjoined prove sufficiently attractive to set the ball rolling, my efforts will not have been in vain.

In order to ascertain for myself the solvent powers of this juice, I had recourse to the following method: Equal parts of juice and water were mixed together, measuring, all told, one and a half ounces. This was placed in a wide-necked bottle, to which was added one ounce of cooked beef cut up into small fragments. The surrounding temperature averaged about 75° Fahr. In an hour signs of fermentation were evident, as shown by the emission of gas and disturbance generally of the mixture. At the expiration of forty-eight hours nearly the whole of the meat had disappeared, rendering the mixture a light-brown colour. The experiment was exceedingly interesting, inasmuch as it revealed the power this juice has on animal tissue. This was particularly noticeable in the emission of sulphuretted hydrogen gas, as evidenced by its smell and action on paper moistened with a solution of lead. Each fragment of meat was surrounded in a few minutes by a liquid lighter in colour and of a lesser specific gravity. On agitation this appearance speedily disappeared, giving place to that similar in the remaining portion of the bottle. A few minutes' rest only sufficed to bring back a return of what may be designated the *digestive process.*

This experiment convinced me at once of its utility, which was subsequently borne out by repeated trials in surgery. The

first case I determined to try it upon was one of fibrous tumour in a horse. The morbid growth was situated in the lower and posterior third of the cervical region, and although more or less what is designated floating, it had a muscular attachment. It was about a quarter of a pound in weight. I adopted the ordinary method of passing a sharp seton needle through the body of the tumour, confining my operations as near as possible to the base. The tape was saturated with undiluted papaya juice, opportunity being taken to inject as much as possible into the opening made by the needle. The same dressing was continued daily for a week, at the expiration of which time the tumefaction caused by the operation had subsided; the tumour was more pendulous, and had the appearance of being entirely detached, so far as its connection with the muscles was concerned. After a few more days the growth was removed in the ordinary way. What the results of a continued application of the juice would have been I am unable to say, but judging from appearances presented, I am inclined to the opinion that sloughing would have taken place.

The second case on which the papaya was tried was one of capped elbow, and for this class of disease it is a remedy *par excellence*. Capped elbows are so well known in India that a description of them would appear futile. If in their initiatory stages they do not yield to antiphlogistic measures, pus or serum inevitably follows; *ergo*, it is in the latter stages where papaya exercises its telling influences. In an old case of capped elbow,—I mean by this, where the patient has been several times admitted, and an indurated sac has become fully developed,—there is perhaps no better line of treatment than that of incision. I am not quite satisfied, however, whether the use of this juice would not in a great measure dispense with the knife. If a bold incision was made at the lower part of the base, combined with a strong counter-irritant externally and a daily dressing of the juice, I think that the tumour would either disappear, or that it would be possible to ensure adhesion of the walls of the sac. There is no doubt about its influence in the latter stages of capped elbow admitted for the first time. The injection of tincture of iodine combined with counter-irritation externally, as a rule, brings

about the desired result; but papaya has a more potent effect in this respect.

The third case for experiment was one of fistula of the poll; and although the case was not under my immediate care, I was allowed to try the effect of this mode of treatment. Various remedies, I was led to understand, had been tried, but with unsatisfactory results. The fistula was situated on the right side, pursuing a rather tortuous course to the wing of the atlas. After ridding the wound of the collection of pus, I applied the juice freely with a syringe, and then inserted a pledget of tow saturated with carbolic acid, one part to papaya juice ten parts. The same dressing was continued for a fortnight, and very marked improvement took place daily. The juice had the effect of destroying the walls of the sinus, or appeared to do so—at any rate, the wound assumed a healthy action. After this date I was compelled to change my *locus habitat*, so lost sight of the case; but I hear that rapid and complete recovery took place.

Had time not been an object to me, I would have liked to have given papaya an extended trial, both internally and externally; but I think that I have adduced conclusive proof that it is worth consideration at the hands of your readers, especially those serving in India. We often meet with wounds of a very sluggish nature, and which occasionally refuse to yield to treatment, especially those of a cancerous or scrofuletic diathesis; it ought also be tried with advantage in bursatti.

The juice emitted by this tree is white in colour and of the consistency of cream, and is found in every part of it, being most abundant in the fruit, which is elongated, and varies in size from ¼ to 2 lbs. The fruit when ripe is eaten by natives. Future experiment might dictate its use in medicine; for, judging from its action externally, it should afford material aid to impaired digestion, and in the hands of scientists add another link to the long list of valuable remedies.

## CALCAREOUS DEGENERATION OF THE LIGAMENTUM NUCHÆ.

BY "ARGUS."

A MALE mule (aged) was admitted to my infirmary about three months ago, for appearing demented, with lassitude, inappetence, unsteady in progression, and having a stiff neck. A stimulant was given, the animal comfortably bedded down, some hay, corn, and water placed in the loose box, and I left with instructions that quietude was to be maintained. The following morning Veterinary-Surgeon Hinge, R.E., accompanied me on my visit to the case, and we noticed that the peculiar expression in the eyes had disappeared, and that the animal, in trying to procure some hay from the floor, had to extend one of its fore limbs and lower its head, neck, and anterior parts of body, to enable it to reach the fodder. I concluded that this abnormal condition was due to anchylosis of one or more of the cervical vertebræ; but my friend, however, with his usual perspicuity, noticed that the rigidity of the neck was greatest between the crest and withers, and on manipulation, which did not produce pain, he found that the superior border of the ligamentum nuchæ, from the withers to a distance of about six inches anteriorly, had become converted into a very hard, inelastic mass, and he surmised that the yellow elastic tissue of the ligament had given place to true ossific matter.

Local treatment, such as fomentation, Ung. Hyd. Bin., etc., has been adopted, but without any marked improvement having occurred.

Its etiology is, I am inclined to think, due to a severe wound (an old cicatrix was noticeable, but has since been removed by the action of the vesicant), probably a puncture produced by some foreign agent, which possibly exists at the present time, in the structure of the ligament, and which has become the exciting cause and focus of the apparently enormous deposit of calcareous material.

I may add that not only the head cannot be depressed in the usual way, but also that the neck will not flex at all to the off side, and but slightly so to the near side.

## RABIES IN THE HORSE.

BY J. C. BERNE, M.R.C.V.S., 1ST CLASS, ARMY VETERINARY DEPARTMENT.

A CASE of this dreadful disease occurred last September, in a horse of K Battery, 2nd Brigade, Royal Artillery, stationed at Kilkenny. There was nothing in the symptoms, as given in books, to make this case a remarkable one, nor, I regret, anything to add to our pathological knowledge of this subject. Yet, as the disease is, happily, rare amongst our equine patients, and as a wish was expressed some time ago in the pages of the Journal, that particulars of cases of this kind might be sent, I give a description of what I witnessed in the one under notice, as well as the information I gleaned of its history.

The patient was a good-tempered, high-spirited horse, aged thirteen years. The earliest symptom manifested was on the morning of the 2nd September, when he was reported "shaking and trembling." On this day there happened to be battery drill, and the horse was taken out by the serjeant-major who usually rode him. On being mounted he was disinclined to move, but having started, his natural free action seemed to return. Before reaching the parade ground, and during the commencement of the drill, he acquitted himself in his usual form; so that the impression created at starting, of something being amiss with him, was removed.

Shortly after the battery exercise had begun he seemed "to give" under his rider. He was then pulled up. Whilst at rest he began to bite the serjeant-major's *left* foot. This was not the sort of playfulness that horses at times are addicted to—it was more of a vicious snappishness, and consequently attracted attention. During the return of the battery to barracks, he moved quite as lazily as at starting, nor did he respond to the pressure of the rider's legs.

He ate his mid-day feed, but whilst being groomed he was very irascible—attempting to bite, and striking out with his hind legs. In this way he conducted himself till the following morning, the 3rd September, when he was removed to the horse infirmary, which is quite close to the stables, and placed in a

loose box, where perfect quietness was ensured him. He did not quite finish his morning's feed, but in other respects he appeared so well, that later in the day he was taken back to his own stall. He had scarcely arrived here amongst his old stable companions, when his lately-acquired vicious tendencies reappeared, and with increased virulence. It looked as if their presence supplied the stimulus to call forth the grave symptoms associated with this terrible complaint. With careful management and much trouble he was re-installed in the horse infirmary. It was at this time he came under my notice.

When left to himself, he picked up bits of hay or litter. For the latter he seemed to have a preference. He commenced to chew it, when suddenly, and without apparent cause, he would cease to masticate, ears moving and eyes watchful, as if his attention were suddenly arrested and concentrated on something known to himself alone. When his head was towards the manger, seemingly oblivious of everything passing behind him, no movement of the observer escaped him. If a hand was raised, the poor suffering beast lashed out two or three times in quick succession.

The condition I am referring to is well described in Fleming's "Rabies and Hydrophobia," where it is said the patient is "much more susceptible to external influences, and very irascible." But the most remarkable symptom to be noted was the almost constant rubbing of the *nea* nostril. This might be interrupted for a few seconds, only to recommence with additional zest. At times he got into the position a horse assumes in micturating; and there was a good deal of flatus. There was no aversion to water—he drank some that was placed within his reach; nor did he show an antipathy to a dog which I had put down near him. There were tremors, chiefly noticed in the muscles of the hind quarters, and those of the fore extremities were also similarly affected, when either of the limbs was in repose—semi-flexed.

As the patient's condition was becoming worse—indeed, quite painful to watch—I had him destroyed at 4 p.m.

I ascertained he had been bitten on the 4th July at the Curragh Camp, where the battery was stationed for the summer drill. The dog that inflicted the injury had run "amuck" through the lines, and was eventually destroyed by a soldier of

the Army Service Corps. The seat of the bite—the inferior part of the near nostril—was marked by a cicatrix about half an inch in length.

The period of incubation was sixty days, and it will have been observed that the patient showed no dislike to dogs, or aversion to water, and that he was almost constantly rubbing the bitten part.

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## NOTES IN AFGHANISTAN.

BY G. A. A. OLIVER, M.R.C.V.S., ARMY VETERINARY DEPARTMENT, KIRKEE.

1. *Climate.*—The climate is excessively dry, and, zoologically speaking, I should say healthy. In consequence of this excessive dryness, the changes from heat to cold, and *vice versa*, are sudden and extreme—in the sun, hot; and immediately the sun goes down, cold (except, of course, in the summer months). This is trying, and tells quickly upon the condition and thrifty appearance of animals, unless clothing is abundant. The natives clothe their animals very warmly with quilts and felts, and so manage to bring them out at all seasons with fine coats—that is, animals of value or for sale.

2. *Physical Aspects.*—The general aspect of the country is barren and stony. The roads lie along the river-beds, or cut across the equally rough shoulders of the hills. The character of the country, no doubt, accounts for the native method of shoeing, viz., a plate with a hole in it. Horses that are foot-sore are able to travel in comfort with this shoe; but the extra care and attention required to keep the feet dry and clean are not bestowed, and the frogs suffer.

3. *Grain.*—Barley, the grain food of the country, is excellent feeding and very abundant, but of a small variety. To make it easily digestible, it requires either crushing or soaking; this is its drawback when campaigning, as the necessary appliances are not always available. The ordinary hand-mill used for grinding wheat is not heavy enough to crush barley, which is generally done by water-mills. Mere wetting is not sufficient to soften the husk, and unless crushed or softened, a third or more of the grain

passes through the alimentary canal untouched. Especially is this the case with bullocks. I have seen them almost starving on full rations of barley—without other food—and proved it on one occasion by having the grain washed out of the evacuations and weighed.

4. *Green Food.*—Lucerne is obtainable nearly all the year round, where irrigation exists, and they cut and feed upon cereals almost up to harvesting. This green crop is very fattening food. At times, each Government horse got as much as 50 lbs. a day, cut one day and given the next. After 24 hours' drying, it loses nearly two-thirds of its weight. Very young lucerne must be well spread out, otherwise it ferments.

5. *Stored Fodder.*—The stored fodders of the country are dried lucerne, only to be had in very limited quantities. Bhoosa (which is the broken straw after bullocks have trodden out the grain) is poor feeding for horses; bullocks do better on it. And "kirby," the stalks of the various kinds of millet, is a coarse but very good food for both horses and cattle. To prevent waste, it requires to be cut with a chopper into 4-inch lengths. When old, it is liable to be infested with insects that eat the heart out of it.

6. *Water.*—It is a thirsty land, that spares no water for the sea. The streams and springs are drained for irrigation, and the soil is so impregnated with salts that the water is universally hard, even to brackishness in some places. Leeches abound in it. When these worms establish themselves in the mouth, blood oozes from the angles when the bit is in; when the bit is not in the mouth, the blood is swallowed.

7. DISEASES: *Indigestion.*—The variable, precarious, and unsuitable supply of food and water—consequences almost inseparable from a campaign—must necessarily entail considerable strain upon the digestive system of animals. Among the preventable causes of indigestion, the neglect to secure a proper interval between feeding and watering, is a most fruitful source of Colic. When circumstances shorten the day, and necessitate watering and feeding late in the morning and early in the afternoon, it is best to omit the mid-day water, and especially so when the food is difficult of digestion and the water

hard. Wheat is popularly considered a grain provocative of indigestion, but did not prove itself this, possibly because precautions were taken to reduce the feeds, or mix with barley or bhoosa for the first day or two. Ground grain, when given dry and without admixture of chaff, is liable to cause obstinate impaction of the œsophagus. Large quantities of green food produce aphthous eruptions on the membranes of the mouth, and surfeit. Young "Walers" are especially liable to suffer from the latter. To subdue the outward irritation and prevent the animal rubbing and biting himself, a solution of salt-and-water is a handy and simple remedy.

8. *Fevers.*—Walers suffer much from Fever, caused by exposure to the sun. Shade was, if possible, procured for them. When picketed beneath willow-trees, they eat the leaves, and apparently with benefit. In the beginning of the cold weather (and especially in damp situations), numbers of horses were attacked with a serious swelling of the throat, resembling mumps. Its advent was sudden, and generally during the night. In some cases the swelling extends upwards over the face, thus giving the animal a most grotesque appearance; in others it gravitates towards the extremities. The swelling is soft and non-inflammatory, affecting neither the breathing nor mastication. Only severe cases were accompanied with feverishness.

Catarrhal Fever is frequent and troublesome in the cold weather. A good remedy when the discharge has a tendency to become chronic, is to cause the vapour of carbolic acid to be inhaled.

Foot-and-Mouth Disease appears to be always present among the cattle of the country. Government bullocks, if allowed to graze, are sure to contract it; it is, however, of a mild type, the animals being seldom off their feed for more than three days. A chief means of perpetuating the disease among Government animals, is the use of feeding-cloths; when an outbreak occurs, it is necessary to withdraw their use. Boil them in lime-water, and re-issue only when the disease has entirely disappeared.

9. *Transport.*—For the working of the transport and the difficulties attending it in the Afghan campaign, see the

Memorandum by the Controller-General of Transport in India. I think there can be no doubt that in a roadless country, guns ought to be the heaviest draught; all else can be divided into lighter loads. The present artillery forge is a ridiculous weight, nearly two tons, and requires eight and ten horses to get it over a difficulty. The cavalry field-forge (small rivet forge) weighs about 2 cwt., and is carried on the back of one mule; it does for shoeing purposes. The objection I have heard urged against it, is that the hearth is too small. I think the hearth might be done away with, and the nozzle of the bellows prolonged to reach the ground, where a fireplace can be made of clay of any size to suit the work in hand. This is the arrangement the natives prefer, and always adopt when allowed; it is lighter, less expensive, and more convenient for India.

The present system with pack transport, of throwing together men and animals who are both ignorant and afraid of each other and their work, can *but* be productive of serious delay and grief at starting. On the other hand, a transport corps that would bear some inverse ratio to the roads and railways beyond the frontier, must be an expensive establishment.

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## Editorial.

### DISEASE AMONG AMERICAN PIGS.

THE course of events has at length compelled the Government of this country to take cognisance, to some extent at least, of the danger which we long ago and repeatedly pointed out was incurred by allowing the flesh and other products of American pigs to be sold for food, without any precautions as to its innocuousness. As usual, we are the last nation in Europe to recognise that the public health may suffer from the consumption of imported food tainted with disease or disease-producing elements; for while nearly every other country has prohibited the importation of American pork, on account of the trichinæ with which it is largely infested, or of the likelihood that the pigs themselves were the victims of disease, we are content to give a mild caution to the sanitary officers to keep an eye upon such food, to cook pork well, and then trust in Providence. We are, it must be confessed, painfully slow in adopting any measures which will protect the public from danger, and the only plea on which the authorities can be allowed to escape from the blame that certainly attaches to their conduct, is that of ignorance of the real state of matters. We know not to what extent Trichinosis

may prevail among people in this country, as the disease may be mistaken for others which it resembles in symptoms, and not unfrequently the muscles of human beings undergoing dissection are found crowded with these worms. It is a fact that the parasites largely infest American pigs, and it is no less a fact that the carcases and products of these creatures are imported into the three kingdoms in immense quantities. But Trichinosis is not the only affection from which the Transatlantic pigs suffer. The most destructive disorder to which the porcine species is liable—the so-called Hog-cholera or Swine-plague—every year sweeps off hundreds of thousands in the United States, no fewer than 1,394,422 hogs and pigs perishing in the year ending May, 1879, in Illinois alone. What becomes of the carcases of these plague-stricken creatures? Are they destroyed, or are they exported as food? We have no positive evidence either way; but if we were to believe the stories we have been told, they certainly are utilised for the most part on this side of the Atlantic, the carcases being converted into food in one form or another. A gentleman whom we met not long ago, and who had lived for a number of years in the Swine-plague haunted States, assured us that he was so disgusted with what he witnessed there, that he dare not trust himself to eat pork, or anything containing lard or oil, unless he could assure himself they were not derived from America.

The disease among American swine amounts to a real scourge, and the exportation of nearly all kinds of food-stuffs from that country is immense. It is only natural that those who suffer from this disorder among their swine, should endeavour to make the best of their misfortune by exporting carcases which they would not care to consume themselves. Our cousins are a sharp business people, and they know that while the seller has need of only one eye, the buyer requires many. In this country there are many persons who do not hesitate to send into the market the flesh of diseased animals, and it is certain that the Americans understand profit and loss as well, if not better than most people.

How far the flesh of pigs which have been affected with Swine-plague may be injurious to those who consume it, we know not; but recent revelations with regard to diarrhœal illness of a most serious character, induced by partaking of diseased pork, which had been cooked, would make us look with great suspicion upon it. This illness has been traced to the presence of a bacillus, and we know that Swine-plague is due to a similar organism.

Knowing the utter indifference of the American legislature to the existence of contagious and destructive maladies among animals in the several States, the intense capability of Americans to push a good trade, and hearing reports from different quarters, we confess to a strong suspicion that the carcases of the majority of the swine which perish across the Atlantic are neither destroyed nor consumed as food there, but are converted into money in Europe. The advice to cook pork well and trust in Providence, is not of much value to the poorer classes, who consume the largest portion of the imported meat. Better protection than this is imperatively required, and the public should

have a guarantee that in our anxiety not to interfere with importations or the course of free trade, this country is not made the receptacle for the pernicious garbage of other nations. Not only should a close watch be kept upon the import of living animals and dead meat, but we should have some satisfactory evidence as to the sources of the latter.

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## HUMAN AND ANIMAL VARIOLÆ: A STUDY IN COMPARATIVE PATHOLOGY.

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

(*Continued from vol. xi., p.* 404.)

### VARIOLA IN FERÆ NATURÆ.

To what extent wild animals in general suffer from variolous diseases it is impossible to say, as there is but little evidence, and that not of a very reliable kind. But that they are susceptible of infection, and are the victims of their own particular kind of Variolæ, there cannot be any valid reason for doubting. We have seen that hares and rabbits are believed to have a Variola, and hunters and others have occasionally reported wild boars, chamois, and other *feræ naturæ* as affected with an eruption like Small-pox.

The *Simiadæ*, in an untamed state, would appear to be often attacked with Variola. It has been observed that when Small-pox has been prevalent in the West Indies, and also in South America, wild monkeys have been affected with a variolic eruption; though whether they were infected from mankind, or whether what is called the epidemic constitution of the atmosphere (a very doubtful influence) also produced an outbreak of Variola among them, it would be difficult to decide.

These creatures certainly seem to be the most susceptible of all animals to the reception of human Variola. Buffon and Barrier give instances of this susceptibility; and so long ago as 1767, it was known to the denizens of Saint-Germain-en-Laye, France, that a monkey became infected with Small-pox through playing with diseased children. A similar instance is related by Paulet, as occurring at Paris in 1770. The two Danish Veterinary professors —Abilgaard and Viborg—state that after having unsuccessfully attempted to convey human Variola to cows, horses, asses, sheep, and dogs, they inoculated a monkey with the virus of that disease. The little creature was attacked with Small-pox, the malady offering similar symptoms and pursuing the same course as in man. Diarrhœa set in towards the last stage of the disease, and it succumbed. Three children were inoculated with matter from this monkey, but without result.

Monkeys, it may be noted, have been successfully vaccinated; that is, in them vaccination has offered all the phenomena observed in children.

### RESUMÉ.

I have now brought my study of human and animal Variolæ to a conclusion, and, in doing so, may state that with the materials at my disposal I have endeavoured, to the best of my ability, to solve some of the difficult problems which always seemed to me to require solution in connection with this deeply interesting and very important subject. The result of my observations and researches incline me strongly to the opinion, an opinion supported by facts, that every species of animal—in the higher orders at least—has its own distinct

kind of Variola, and that the Variola peculiar to each species is capable of indefinite existence, transmission, or propagation in that species. But when we attempt to transfer the Variola of one species to another species, then not only do we encounter difficulties, or even failure, but when successful we sometimes find striking differences and peculiarities in the resulting phenomena; whereas in the same species it is capable of easy transmission, and always preserves its own special characteristics. In some species the disease is "infectious" (*volatile virus*, if the expression be admissible), as well as "contagious"—as in man and the ovine, canine, cameline, and porcine species; while in other species, as the bovine, caprine, and equine species, it is merely "contagious" (*fixed virus*), immediate contact or inoculation being necessary for its production. In some species there is great constitutional disturbance, and the mortality is serious—as in creatures the virus of whose Variola is "volatile" (mankind and the sheep, dog, and pig); whereas in others whose Variola is propagated by a "fixed" contagium, there is little, if any, fever noticeable, and the disease is benignant (cow, horse, goat).

Not only is the character of the eruption different in different species (as in man and the sheep and pig, and the cow, goat, and horse); but in some species it is more or less local (Variola with a *fixed* contagium), as in the horse, cow, and goat; and in others general, as in the human, ovine, porcine, cameline, and canine species (*volatile* contagium). The disease may, and does, appear in one species entirely independently of its manifestation or absence in other species; and it may prevail most extensively in one species—as in the human or ovine species—and yet other species manifest no traces of Variola. The few instances recorded of the malady having been transmitted from one species to another, must be looked upon with grave suspicion, and particularly those which have reference to the accidental communication of human Variola to the cow or horse. There can scarcely be a doubt that the gravest mistakes have been made in this direction; and for evidence of this, we have only to refer to one instance, which, strange to relate, has been quoted not only by medical, but by veterinary authorities in this country, as affording undeniable proof that human Small-pox may be transmitted to the cow. It is the instance given by Ceely, and insisted upon by him as conclusive circumstantial evidence that human and bovine Variola are one and the same disease. As the mistake made by Ceely has not hitherto been discovered, I take upon myself the responsibility of proclaiming the error, by reproducing his narrative of the occurrence, and commenting upon it. He writes:—

"At the village of Oakley, about sixteen miles from the town of Aylesbury, Small-pox has been epidemic from June to October, 1840. Two cottages, in which three persons resided during their illness, were situated on each side of a long, narrow meadow, comprising scarcely two acres of pasture-land. One of these three patients, though thickly covered with pustules of Small-pox, was not confined to her bed after the full development of the eruption; but frequently crossed the meadow to visit the other patients—a woman and a child—the former of whom was in great danger, from the confluent malignant form of the disease, and died. According to custom, she was buried the same evening; but the intercourse between the two cottages was still continued. On the day following death the wearing apparel of the deceased, the bedclothes and bedding of both patients, were exposed for purification on the hedges bounding the meadow; the chaff of the child's bed was thrown into the ditch, and the flock of the deceased woman's bed was strewed about on the grass over the meadow, where it was exposed and turned every night, and for several hours during the day. This purification of the clothes continued for eleven days. At that time eight milch cows and two young heifers (sturks) were turned into this meadow to graze; they entered it every

morning for this purpose, and were driven from it every afternoon. Whenever the cows quitted the meadow the infected articles were again exposed on the hedges, and the flock of the bed was spread out on the grass, and repeatedly turned. These things remained till the morning, when the cows were re-admitted, and the contaminated articles were supposed to be withdrawn. It appears, however, that the removal of the infected articles was not always accomplished so punctually as had been enjoined; so that, on one occasion at least, the cows were seen in the midst of them, and licking up the flock of the bed which lay on the grass. These cows were in perfect health when first put out to graze in this meadow, but in twelve or fourteen days, *five* (out of the eight) milch cows appeared to have heat and tenderness of the teats. The teats became swollen, and small, hard pimples could be distinctly felt upon them, as if embedded in the skin. These pimples daily increased in magnitude and tenderness; and in a week or ten days they rose into *blisters* (vesicles), passing into brown or blackish scabs. When the teats were in this condition, and very tender, constitutional symptoms of ill-health became developed. Sudden *sinking* or loss of milk, drivelling of saliva from the mouth, frequent inflation and retraction of the cheeks, staring of the coat, "tucking up of the limbs," "sticking up the back," and rapid loss of flesh, were the appearances which even the peasants themselves were able to appreciate. By the middle of the third week the pustules were mature, and the crusts and loose cuticle began to be detached. The simultaneous occurrence of the disease on all the animals increases the probability of the operation of one common cause. The whole of the cows were certainly affected within less than three days of each other; and another circumstance requires particular notice, namely, the occurrence of the disease in a young heifer (sturk) to which of course the disease could not have been communicated by those casualties which commonly propagate the vaccine Variola amongst milch cows. The cause which originated the disease amongst them at the same time affected the young heifer, which hitherto had not been considered liable to the vaccine disease, simply because no one had seen the animal affected by it. Now it is known, both in this country and in Germany, to be liable to the disease.

"The proprietor of the animals referred to in this narrative had the disease communicated to himself. He had never suffered from Small-pox nor the vaccine disease; and it was his own spontaneous conviction 'that his cows had been infected from human Small-pox effluvia,' to which undoubtedly they had been exposed. He had not the remotest idea of the medical theories concerning the nature of the disease, and consequently had no prepossession in favour of the opinion he thus spontaneously expressed. His cattle had hitherto been in good health, and no vaccine Variola had been known in the vicinity."*

Now it is easy to perceive, from this description, that the malady the cows suffered from was not Variola at all, but simply Foot-and-Mouth Disease (*Eczema Epizoötica*). The *vesicles*, the *constitutional symptoms*, the *loss of milk*, but, above all, the *drivelling of saliva from the mouth*, *frequent inflation and retraction of the cheeks*, *staring of the coat*, *tucking up of the limbs*, *sticking up of the back*, *rapid loss of flesh*, are all typical symptoms of this epizoötic and now well-known disorder, and certainly not those of Cow-pox. The Foot-and-Mouth Disease was introduced into this country for the first time in 1839, and nothing being known of its history or symptomatology, it caused much astonishment, as well as surmise with regard to its nature. It spread rapidly over the three kingdoms. The prevalence of Small-pox in the village of Oakley, and the occurrence of this bovine

* Trans. Provincial Medical and Surgical Association, vol. x.

plague among the cows, was a mere coincidence; while the almost simultaneous development of the malady in the latter is further proof that the affection was not Cow-pox, nor yet transmitted Small-pox.*

When we consider the question of aptitude of one species to receive the Variola of another, we again meet with marked differences. Some species will readily take the Variola of another species, and retain it unimpaired in virulence through a continuous series of generations, while they will remain stubbonly refractory to the reception of the Variola of a third species; or if they do receive it, it is in an abortive form, and cannot be transmitted beyond the second or third series of animals.

Vaccinia affords us a good illustration of this fact. In a remarkable paper written by Chauveau, and published in 1877,† on the vaccinogenous aptitude of the principal vacciniferous species, he gives the following general conclusions derived from this experimental study:—

"1. Classical vaccination proves that the three principal vacciniferous species—man, ox, and horse—are equally apt to transmit vaccinia indefinitely, and exhibit a like vaccinogenous aptitude. The horse, nevertheless, is distinguished by the relative frequency of true generalised vaccinal eruptions which, in young animals, may follow cutaneous inoculation.

"2. When, instead of inserting the vaccine virus into the mucous layer of the derm, it is passed into the subcutaneous connective tissue, the virus manifests its action by two kinds of effects common to the three species: a more or less marked local affection is developed, and the animals acquire *vaccinal immunity* as absolutely as if they had undergone the classical vaccination. This double result is obtained equally well in the three species, so that they are allied, as it were, in the vaccinogenous aptitude.

"3. These ordinary and constant effects are not the only ones produced by the injection of the vaccine virus into the connective tissue. In the equine species, and particularly young animals, there sometimes occur magnificent pustular eruptions, which, in their seat and general characteristics, differ in nothing from natural Horse-pox. These vaccinal eruptions have never been observed in the experiments on the bovine species, though they were numerous, and made under those conditions which are reputed to be the most favourable to the development of the so-called "spontaneous Cow-pox." These eruptions have never been witnessed in experiments on man, though it must be confessed that the number of these was small.

"But the negative results in the human and bovine species do not authorise the conclusion that these are refractory to the manifestation of the vaccinal eruption in the before-mentioned conditions. But they demonstrate this important fact, that, so far as aptitude for the development of this exanthem is concerned, the organism of the horse possesses an incontestable superiority.

"4. This superiority is manifest equally, whether the vaccine virus is introduced directly into the lymphatic or blood-vessels, or enters by the natural channels of absorption. The intra-venous injection of vaccine matter—the most certain and easiest of these experiments—does not appear capable of producing vaccinal immunity in bovine animals. But in the horse not only does it ensure this immunity, but it often produces the vaccinal exanthemata which are an exact facsimile of those of the natural disease.

* At the end of 1878, Dr. Klein, experimenting under the supervision of Drs. Seaton, Burdon-Sanderson, and Mr. Ceely, had inoculated sixteen heifers and fifteen milch cows with Small-pox matter taken from people at different stages of the disease, but with negative results.

† Contribution à l'Etude de la Vaccine Originelle. Journal de Médecine Vétérinaire et de Zootechnie. Lyons, 1877.

"5. The results of this experimental study show as well, if not better, than clinical observation, that the horse has a special aptitude for the natural or spontaneous development of Vaccinia, either under the influence of occult *contagia*, or by the problematical intervention of any other equivalent cause which has yet to be ascertained. The bovine species is far from manifesting such an aptitude for the evolution of natural Vaccinia. It might even be asserted that, in this respect, the ox is not superior to the human species—at least it is certain that the inferiority of the latter is, has not been demonstrated.

"From this study it is evident—and the evidence is further fully confirmed by clinical facts—that the organism of the horse is the real source (*vraie patrie*) of natural Vaccinia, conformably to the views of Jenner."

Chauveau notes in the course of his remarks, that if the other supposed vacciniferous animals—the goat, sheep, dog, etc.—show more or less distinct eruptions when they are vaccinated, the virus cannot be indefinitely cultivated on them; it loses its activity very rapidly, often in the first generation.

With regard to the protective influence of one attack of Variola from subsequent attacks, there can be no doubt; and this protection has been sought for, with a view to preventing the more serious Variolæ of certain species of animals, by inoculating them with the virus of a less malignant Variola of another species. But here, again, we find evidence in support of our view, that every species has its own particular Variola. Human Small-pox, readily communicated from a diseased to a healthy person, can scarcely be transmitted, if at all, to the lower animals; while Horse-pox and Cow-pox are easily transmissible to a number of species, and in man and the horse and cow, when inoculated, will certainly ensure against the natural disease. But we have seen that Sheep-pox is not communicable to other animals (if we except the few, and not very reliable, instances recorded), and that vaccination will not protect ovines from their special Variola.

But it must be confessed that experimental pathology has here an almost virgin soil to cultivate; for we know but little of the degree of inter-communicability of the different Variolæ, or of the protection they mutually afford against each other's operation. The subject is full of interest, and of the deepest importance to mankind, and that it has been so utterly neglected is one of the mysteries which overhangs many other serious problems in pathology.

I trust that the grave fallacy that Vaccinia is only human Variola modified by transference to bovines, will no more be heard of; and that the claims of comparative pathology to recognition as a worthy helpmate to human pathology in the elucidation of this and other subjects in medicine, may be conceded and acted upon.

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## THE FELLOWSHIP DEGREE OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

AT a meeting of the Examination Committee for the Fellowship Degree of the R.C.V.S., on March 2nd, the following gentlemen, having undergone the necessary tests, were elected Fellows:—

1. Rostron, John Ashworthy, 2nd Life-Guards.
2. Matthews, Iles, 4th Hussars.
3. Fraser, James, Newbury, Berks.
4. Leather, William, Liverpool.
5. Stock, Robert A., Lewes.

The following were the written questions:—

*Pathology.*

1. Describe *Leukæmia* and the pathological conditions which mark its existence in the domesticated animals.

2. Describe the differences between *Pyæmia* and *Septicæmia*, and state how both are produced.

*Epizoötiology.*

1. What are the influences which appear to favour the genesis and spread of influenza?

2. Describe some of the diseases which, being enzoötic, may, under certain circumstances, become epizoötic.

*Sanitary Science.*

1. Give the most essential features of a well-constructed stable, including (*a*) aspect, (*b*) light, (*c*) cubic space per horse, (*d*) ventilation, (*e*) drainage.

2. Describe the various kinds of *paving* in common use in stables, with their relative merits in order, and reasons.

*Dietetics.*

1. State the advantages of *manger feeding*. Give the component parts of the food, their preparation, and relative proportion for draught horses.

2. What are the causes of *Azoturia* in horses? and state what preventive measures you would adopt.

*Surgery.*

1. What are the ordinary causes of *luxation of the patellø*, and state how you would reduce it.

2. Describe the usual position of the testicle in cryptorchid horses, and how you would operate for its removal.

*Comparative Anatomy.*

1. Describe the relations and arrangements of the intestines (both large and small) in the horse, ox, and dog.

2. Describe the characters and arrangement of the teeth in the ox, pig, and dog, as compared with those of the horse; and describe the organs by which the food is triturated in birds.

*Physiology.*

1. Describe the structure of the mammary gland. Give the physical characters and chemical composition of milk.

2. Describe the structure of a Graafian follicle, and give the changes that take place in it after the discharge of an ovum.

3. How is urine secreted? State by what circumstances its quantity or quality are influenced in health.

*Therapeutics.*

1. Describe the physiological and therapeutic action of the salts of iron; give the general symptoms that indicate their administration.

2. What is quinine? State its physiological and therapeutic action. Mention what is known of its *modus operandi*, and the general indications for its administration.

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## INQUIRY INTO THE TRANSMISSIBILITY OF THE DISEASES OF ANIMALS TO MAN BY WAY OF FLESH OR MILK USED AS FOOD.

A MEETING of the Commission, lately appointed by the Committee of Council to investigate the present knowledge on the subject of the communicability of diseases to man, by the use of meat or milk from diseased animals, was held on February 3rd, under the presidency of Dr. Alfred Carpenter.

It was resolved that the transmissibility of the following diseases to man, whether in their original form or in some modified type, should form the subject of the inquiry:—1. Contagious Pleuro-pneumonia; 2. Rinderpest; 3. Foot-and-Mouth Disease; 4. Anthrax; 5. Quarter-evil; 6. Texan fever; 7. Tuberculosis; 8. Glanders; 9. Horse-pox; 10. Sheep-pox; 11. Vaccinia; 12. Fowl-cholera; 13. Garget; 14. Swine-plague; 15. Scarlatina; 16. Diphtheria; 17. Pyæmia; 18. Parturient fever; 19. Erysipelas; 20. Animal parasites (including cysticercus, fluke, trichinosis).

It was further resolved that evidence should be collected by members of the Commission relating to the presence or absence of any infectious properties in the meat or milk of animals affected with the diseases mentioned above; and that the inquiry should be extended to the question of the communicability of typhoid fever by milk directly or indirectly contaminated.

In view of the knowledge often possessed by members of the medical and veterinary professions, and especially by medical officers of health, as to the sale and consumption of diseased meat or milk, it was further determined to solicit the return of facts, whether positive or negative, relating to the investigation, from the persons most likely to be furnished with such information.

The following points were suggested as heads of inquiry:—

1. Effects observed in man after the consumption of the meat of animals known to have been diseased (specific infection, non-specific affections, immunity).
2. Effects observed in man after the use of milk from diseased animals.
3. Results observed in animals after the ingestion of diseased meat, whether experimentally administered or otherwise.
4. Transmission of the disease to the young by the milk of the mother.
5. Conditions capable of destroying or modifying the infectious properties of meat or milk.

Communications bearing upon these or allied points will be welcomed by Dr. Carpenter, of Croydon; Dr. Greenfield, of 15, Palace Road, St. Thomas's Hospital, London; Mr. F. Vacher, of Birkenhead; Mr. G. Fleming, Army Veterinary Inspector, War Office, Pall Mall; and by Dr. William Ewart, of 33, Curzon Street, Mayfair, Honorary Secretary to the Commission.

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## ROYAL COLLEGE OF VETERINARY SURGEONS.

We are informed that the handsome contribution of fifty guineas has been received from Thomas A. Dollar, M.R.C.V.S., London, for the Building Fund of the Royal College.

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## THE FITZWYGRAM PRIZES.

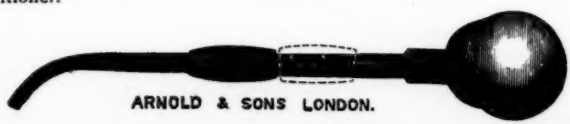
We are requested to intimate that the competition for these prizes will take place as soon as possible after the close of the examinations in Scotland. The exact date can be ascertained from the secretary of the Royal College of Veterinary Surgeons. The entries will be limited to those who have graduated since the last competition, and who passed with "very great" or "great credit." The conditions will be much the same as last year, except that the number of marks required to be obtained in botany and chemistry will be reduced to one-half of the totals formerly allotted to these subjects.

# New Veterinary Instruments.

## "NASAL INSUFFLATOR."

BY J. DOWLING ALLMAN, PHARMACIST, A.P.S., CREE CHURCH LANE, LONDON.

DISEASES of the nose, such as Catarrh, Nasal Gleet, and muco-purulent discharges from that organ, are without doubt the most tedious and trying complaints the veterinary surgeon has to contend with. I have seen cases that have withstood every well-tried remedy, both medical and surgical, such as injections, trephining, and still the discharge existed. An eminent member of the veterinary profession drew my attention to a case he had under his care for over two months, which resisted every remedy he employed. I recommended him to try Pulv. Iodoformi Co., and he wrote me a short time after, saying, "Your remedy has been used *more dicto*, and the result has been marvellous, the animal, after two weeks' application, is completely cured." Now it is an admitted fact that many of those chronic discharges from the nose emanate from some very slight cause—such as simple Catarrh, or Influenza—which, if neglected, will set up congestion of the Schneiderian or pituitary membrane. Thus, for instance, an animal is attacked with Influenza, either by contagion or from catching cold, and an acrid watery secretion trickles from the nose, mingled with white, flaky mucus, sometimes accompanied with slight tumour of the submaxillary glands. In this first or incipient stage, the veterinary surgeon is frequently not consulted, but as the disease makes progress, which it is wont to do in three or four days, he is called in, to find the malady advanced to its most virulent form. The discharge from the nostrils is copious, and of a muco-purulent character, and if the Schneiderian membrane be examined, it will be found swollen, congested, deeply reddened, and very irritable; the submaxillary tumour is more prominent, and may be accompanied with fever; a loose and sonorous cough is heard, and evident signs of sore throat, showing that the disease has attacked the larynx. It is here the animal will display remarkable signs of discomfort; refusing to eat or drink, it moves sluggishly, and is an object of great commiseration. Now it is in this stage of the disease that the discharge from the nose assumes a somewhat irresistible character, and if not checked, will go from bad to worse, until trephining is resorted to; and even then I have known cases which have lasted for months after the operation. In order to improve on the general treatment of those diseases of the nose, it occurred to me that an instrument could be devised for puffing into the nostrils a remedy which I shall allude to presently. I spoke to Messrs. Arnold and Sons, the well-known surgical instrument makers, respecting the sort of instrument that I required, and they have successfully made the identical thing, which I am sure will not fail, when known, to become a popular instrument with veterinary surgeons. The following is a correct diagram of the instrument, which I have called a "Nasal Insufflator." It is extremely simple in its character, and can be easily used by any ordinary practitioner.




*Directions*:—The animal being secured *secundum artem*, the Iodoform Co. is placed in the hole marked A; the instrument is then gently passed

up the nose as high as it will conveniently go ; then the india-rubber ball is pressed, when it will send the powder into the nose and its various cavities.

I shall now proceed to speak of the remedy which I advocate in the treatment of those tedious diseases ; and I have seen such excellent results from its use in the sister profession, that I have great hopes of success from its employment in veterinary practice. *P. Iodoformi Co.* This powerful remedy can be employed by means of the "Insufflator" with most conspicuous and decided results, more especially if the discharge be of a gleety and offensive character. It will speedily check the discharge, destroy the fœtor, and strengthen the excited and congested membrane. Besides its wonderful healing and antiseptic properties, it has the twofold advantage of acting as a fumigator, the iodine fumes permeating through the apertures into the different sinuses, where they attack the disease. Iodoform has been most advantageously used by Mr. W. Cheyne, surgeon to King's College Hospital, London, in the treatment of Gonorrhœa and Gleet in man, and this has been confirmed by many other eminent surgeons. His method of employing the remedy is by dissolving the iodoform in butter of cacoa, and forming a bougie, passing it into the urethra. Mr. Cheyne has proved that two or three of these iodoform bougies will cut short an attack of Gonorrhœa, by killing the septic germ which sets up the discharge, and will soothe the inflamed and irritable mucous membrane. It is proved that iodoform will cure inflamed and relaxed sore throats. My friend, Dr. Jackson, F.R.C.S., of Plymouth, has successfully used iodoform in the treatment of malignant sore throat (scarlatinal or diphtheritic). When the mucous membrane was relaxed, swollen, granular-looking, and covered with mucus or pus, he found that a few applications speedily reduced and even cured the disease. Mr. Jackson has cured Ozœna with iodoform, when the malady affected the upper and back part of the nose, with its numerous recesses. His mode of employing the remedy in those aggravated cases is certainly most ingenious. By means of a curved brush and a saturated solution of iodoform, he mops out the posterior nares from behind. He has proved that a few applications in this manner checks the nasal discharge and hastens recovery. If iodoform will cure Gonorrhœa, Gleet, and Ozœna in man, surely it will cure Nasal Catarrh and Gleet in the horse. Before closing my remarks on this subject, I have to express my thanks for some practical information received from my friends, Messrs. E. and E. Price, of Birmingham, and Mr. Perrin, of Worcester, with reference to my "Insufflator," and I hope that it will be found to answer all that I advocate for its use ; if so, I shall consider that I have done a little service to the art and practice of veterinary science.

## CASTRATION AND HERNIA CLAMPS.

BY A. METHERELL, M.R.C.V.S., BRIGHTON.

I DESIRE to introduce to my professional brethren two instruments, one being merely an improvement on the old pattern—I refer to our screw caustic clams. This instrument, as shown in the following woodcut, figure 1, con-

FIG. 1.

sists of the ordinary caustic clams, but with a strong hinge at one end instead of being tied with string; and at the other two holes are drilled for a small screw to work through. When one or both cords are enclosed in the clams, intense pressure is brought to bear upon the parts by means of the screw, enabling the operator, without assistance, to tie the clams prior to removing the screw; whereas, in the old way, an assistant had to close the clams upon the cord with a pair of pincers, and so hold on tight until both ends of the clams were tied; which mode is far from satisfactory, as well as being clumsy and unscientific. The other instrument, as shown in figure 2, for umbilical hernia, is almost unique in its simplicity, and is composed of two stout blades of steel, which work upon a pivot, and close upon each other, something like scissors. It is furnished with two eyes, one moveable, for a rather long screw to pass through, which produces splendid pressure.

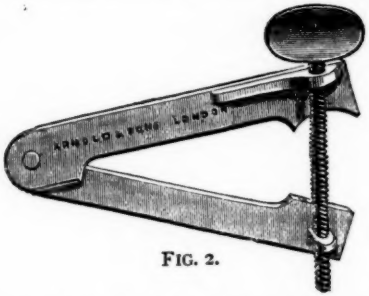



FIG. 2.

The mode of operating upon the colt or yearling is as follows:—The animal being fastened and placed in a suitable building with beams, has the fore legs tied together, and then the hind ones; but there is no connection between the hind and fore cords, they should be kept separate. The hooks of two single pulleys working from above, are then attached to hind and fore cords respectively, when, with a pull altogether, the animal is cast with hind and fore legs separate, and far apart out of the way. The operator then grasps the hernial sac with his left hand, raising it well up, and passes about three ordinary wire skewers, four inches long, through it, pretty close to the abdomen, but avoids wounding any viscera. A strong waxed thread is passed round under the skewers, and tied tightly to keep them in position, and the clams placed over all and screwed home. The patient is turned away to grass, the clams being found some days after on the ground. The cure is complete, and the patient shows no ill effects. Tetanus rarely supervenes. I never knew a case. Messrs. Arnold have had patterns of the instruments, and now keep them in stock.

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## Proceedings of Veterinary Medical Societies, etc.

### LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE annual meeting and dinner of the above Association was held at the Albion Hotel, Manchester, on Friday, February 25th, 1881; A. Lawson, Esq., President, in the chair. Present—Mr. George Fleming, Professor Williams, Professor Walley, Messrs. John Lawson, Peter Taylor, T. Greaves,

T. Taylor, T. Hopkin, J. B. Wolstenholme, E. Faulkner, W. Dacre, Sep. Lambert, R. Lawson, W. A. Taylor, and Mr. Johnson, of Manchester; Messrs. C. W. Elam, J. W. Moore, George Morgan, and William Leather, of Liverpool; T. Briggs, W. Woods, J. B. Taylor, A. H. Darwell, R. Roberts, W. Whittle, T. B. Stone, J. B. Polding, John Taylor, J. Bunnell, J. Litt, H. Marshall, James Eltoft, Drs. Bowman, W. T. Martin, and W. A. Renshaw, Mr. Thompson, and the Secretary. Letters were received from Professor Gamgee, Professor McCall, Professor Robertson, Professor Steel, Professor Brown, W. A. Cartwright, A. Brooks, George Darwell, A. W. Briggs, B. Cartledge, H. T. Hodgkinson, M. E. Naylor, J. Brooks, S. L. Buckley, W. G. Schofield, J. Hart, J. A. Polding, H. Thompson, James Lambert, S. F. Fallding, M. J. Harpley, J. Storrar, J. Howell, F. Dun, G. Humphries, J. Fraser, J. Leather, G. Hardie, F. H. Ridler, C. Stephenson, S. Wilson, J. W. Hill, G. R. Dudgeon, and T. A. Dollar, regretting their inability to attend the meeting.

The minutes of the last meeting were read and confirmed.

The SECRETARY then read a letter received from the Provisional Committee relative to the proposed "British National Veterinary Congress," the object of which was explained by Mr. Faulkner and other gentlemen; and after some discussion Mr. T. Greaves proposed, and Professor Williams seconded the resolution, "That the President, Mr. W. A. Taylor, Mr. T. Hopkin, and Mr. E. Faulkner be empowered to act with the Provisional Committee in carrying out the preliminary details of the Congress." Carried.

Mr. WOLSTENHOLME proposed as member Mr. C. W. Elam, of Liverpool, seconded by Mr. Faulkner. Carried.

Mr. T. TAYLOR nominated Mr. W. A. McCaldon, of Manchester.

Mr. S. LOCKE nominated Mr. A. M. Michaelis, of Stockport.

The PRESIDENT then read his inaugural address as follows:—

Gentlemen,—I rise with very great pleasure to bid you all a cordial welcome to this our annual meeting, and especially to thank the members of the Lancashire Veterinary Medical Association for the honour they have done me in electing me their President. This society is allowed on all sides to be one of the very foremost—nay, many maintain it is the foremost, and an Association almost too powerful in our professional politics. Perhaps we ought to be proud of this opinion, as it shows we have not fallen off from the proverbial energy of the men of the North.

The society has, however, always one object in view—the advancement of our profession. To praise veterinary associations, and to set forth their advantages, would be now unnecessary, for they are evident to all. Nothing, I believe, does more to strengthen and improve our profession, and nothing more removes friction and promotes good feeling, than such meetings as this, and we therefore cannot too much foster and encourage them.

Our profession is undoubtedly making great strides, not only in knowledge, but also in public estimation. Its usefulness is plainly apparent, and veterinary surgeons are now considered, not as ignorant empirics who only work by rule of thumb, but as scientific practitioners and thinking members of society. Not many years ago there were, except in the Army, few Government appointments, but now there are many. And we may reasonably assume that, as our science has by its own merits burst through the mist of ignorance and prejudice which sought to hide it, I say we may fairly assume that it will only become more and more recognised and appreciated. We see on all sides signs of this recognition and advancement. We have the numerous Government appointments for the inspection of cattle and sheep, and various colonial appointments; also those offered by corporations, railway and tramway companies, which are well rewarded. In the Army the profession meets with much of, but not all, the recognition it deserves. Within

the last four years a royal warrant has appeared, which has substantially increased the pay and pensions of veterinary officers. The army veterinary surgeons have in our two last campaigns—the Zulu and Afghan ones—received the highest praise in the reports of the different generals in command. I have had an opportunity of seeing some of those reports, and nothing could be more flattering to the profession or to the officers who have so well deserved them.

Government has, as many of you are aware, recently established an Army Veterinary School, of which Mr. James Lambert has the honour of being first instructor. He has had all the trouble of setting it going, but he has his reward, for I am assured that this school has already greatly raised the opinion of the officers of the Army as to our profession. That the officers take a great interest in it, I can personally testify, as I was last summer present at one of the lectures, when there was an attentive audience of nearly fifty.

We have generally in the profession done much, very much, considering we have received little outside and no Government aid, at least in money; but we are now on firm ground, fairly united, and therefore in a position of great hopefulness. But there is still much to do, and foremost of all I place the "penal clause." That would be our official stamp of recognition, and nothing would tend so much to our benefit and progress. Yes! and I venture to say nothing would be more conducive to the welfare of our domesticated animals, and consequently to the advantage of their owners. The profession, with very few dissentients, wish for the penal clause, and we all see how desirable it is; therefore we should do our very utmost to obtain it. We can do much by advocating it on every favourable occasion, and still more by each of us asking our Members of Parliament, wherever we may meet them, to support it.

The measure is to be introduced into the House of Lords by Lord Aberdare. We must all wish every prosperity to it, and I fervently hope that your next year's president may have the pleasure of congratulating you on having received the last and greatest mark of recognition, and that the title of Veterinary Surgeon may no longer be at the mercy of any one who chooses to usurp it. Another question which has been and is agitating the profession, is the best time for the future veterinary surgeon to begin to see practice; some say he should go to college for a year before he goes to a veterinary surgeon; others that he should *first* go to a veterinary surgeon, for at least a year, before he goes up for his *final* examination. My opinion is, that the pupil should be three years with a veterinary surgeon *before* he goes to college; but at the same time I wish to say that the veterinary surgeon should watch over his conduct as far as he can. The master should remember that a great trust is submitted to him, and should take care that his pupil is so instructed as to understand the why and the wherefore of what he is doing. I consider the pupil should be under the supervision of his master, not only as regards his professional education, but also as regards his general behaviour and conduct.

A young man becomes a pupil at a very impressionable time of life, and his whole future welfare may depend on the impressions he then receives. How great, then, is the responsibility of the master, and yet how little trouble it is rightly to meet it! The need of good general education is every day becoming more felt, and not less so in our profession, which education can do so much to raise. The man who starts in life with the groundwork of a good education starts well, and, if he will profitably use it, has every chance of success as a veterinary surgeon.

We labour under a great disadvantage in not having a building of which we need not be ashamed as the home of the Royal College of Veterinary Surgeons. We all of us feel that the home in Red Lion Square is scarcely

such an edifice as we require ; therefore it is matter for congratulation that a vigorous effort is being made to obtain a more desirable abode. A scheme has been suggested, and it is to raise the funds for a new building by shares to be taken by members of the profession. This, I hope, will meet with success ; at least I shall be glad to help by taking some shares myself, and many here will doubtless be equally willing to join in the same good work.

There is another subject I must draw your attention to. Should not veterinary surgeons be exempt from serving on juries? When they have, as all in practice have, so much valuable property depending upon their attention, it is hard, not only on themselves, but still more so on their clients, that they should have to neglect their patients by waiting about the law-courts. I think that we may reasonably urge the same ground as our medical brethren for seeking exemption.

Our profession is the cause of much public discussion, in which it is sometimes, usually by the ignorant and prejudiced, roundly abused, and sometimes greatly praised; it, however, shows a vigorous and lively vitality. A movement has been set on foot in Dublin to establish a veterinary college for Ireland. Although we may most of us think we have quite enough teaching colleges, yet we cannot reasonably object to our Irish brethren having a teaching college also, and we cannot refuse to wish it, if well established and conducted, every success. Yet we should all strenuously oppose the granting of a licensing power to any other body than the Royal College of Veterinary Surgeons of Great Britain and Ireland, as by royal sign-manual established. To grant such licensing power to any teaching or other college would, in all probability, be to create competition for granting diplomas through an easy professional examination, and I need not tell an audience of veterinary surgeons that such a measure would mean ruin to our professional education and efficiency. We cannot, therefore, fairly wish all success to an Irish teaching college, but we must all hope that the idea of making it a licensing one will not be carried into practice.

There is one more subject I should like to draw your attention to—the examination of students for the diploma of the Royal College of Veterinary Surgeons, which I think most of us admit needs a little reform. At present the examiners are, I understand, elected for five years, and I am told their term of office expires next year, so that now is the time to speak if anything new is brought forward, and it occurred to me this might be a good opportunity of taking the opinion of the members of our Association on it. Is our body not strong enough to conduct its own examinations? To the medical profession, in time gone by and up to the present moment, we are greatly indebted in assisting us yearly, on one or two subjects, to examine our students for the diploma. Many members of the profession think that we can and ought to conduct our own examinations without external aid, whilst others think it beneficial to have the sister profession to help us—at least in physiology, chemistry, and botany.

My own opinion is, that at present it is advisable and politic to steer a middle course, and that the time has not arrived when all those tables should be equally represented by veterinary surgeons ; and I feel sure, in fact I know, that we have many who would be very capable examiners.

I thank you most sincerely for the attention you have paid me, and I should be pleased to hear any opinion on the topics I have named. (Applause.)

Mr. GREAVES proposed a vote of thanks to Mr. Lawson, which was cordially seconded by Mr. George Fleming, supported by Professor Williams, and carried by acclamation.

The members and guests then dined together, when the usual loyal and patriotic toasts were ably proposed and responded to, and a very enjoyable evening was spent.

SAMUEL LOCKE, *Hon. Sec.*

## LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE sixty-sixth quarterly meeting of this Association was held at the Medical Institute, Hope, on Friday evening, the 11th of February, 1881. The President, C. W. Elam, Esq., in the chair. Members present—Messrs. Reynolds, Moore, Kitchin, Morgan, Welsby, Jackson, and the Secretary, Liverpool; Messrs. Greaves, Locke, and Faulkner, of Manchester; Mr. Woods, of Wigan; Mr. Whittle, of Worsley; Mr. Barnes, of Malpas; and Mr. R. C. Edwards, of Chester.

Letters regretting their inability to attend were received from Messrs. G. Fleming, A. Lawson, J. B. Wolstenholme, and W. E. Brown.

The minutes of the previous meeting having been read and confirmed, Mr. Woods proposed for election as member, Mr. W. E. Brown, of Ormskirk, seconded by Mr. Moore, and carried unanimously.

It was proposed, seconded, and carried unanimously, that the re-election of Mr. R. S. Reynolds, as member of Council of the Royal College of Veterinary Surgeons, in May next, be supported by this Association.

The PRESIDENT then delivered his address. He said:—

Allow me, gentlemen, to thank you for the unexpected honour you have done me, by electing me for the second time to fill the important and responsible position of President of this Association. I take it as a proof of confidence and esteem, and in return I will do all that lies in my power to extend the usefulness, and advance the best interests of this Association and the profession; and I shall hope for a continuance of the same unvarying kindness and consideration from you as you have so freely extended to me during the first year, and for which I shall try to prove myself worthy; for I have no higher ambition than to be useful to the members of my profession by bringing what little ability and experience I have gained to bear on the difficult problems still requiring solution, in the hope that I may in some degree add something to the general knowledge, and leave the profession better than I found it.

Another year has passed away since I read my last address before this Association, and with it, alas! how many fair hopes have been blighted, how many promises and aspirations left unfulfilled! In reviewing the past, let us not be cast down or discouraged at the slow progress made, or by the little that has been accomplished, ever bearing in mind that every great enterprise or noble achievement that man has accomplished has been the result of steady, prolonged, and repeated effort. Then let us not despise the day of small things, ever remembering that every successful effort, however small, to attain a high and noble object adds increased momentum to the next effort, and reduces the power of resistance. In reviewing the work of progress of the profession during the year that has passed, I don't expect to say anything new or startling (for a great authority has truly said, "There is nothing new under the sun"); still I think much may be gained by an honest and careful review of past work, and as reviewed from different standpoints. The first word is one of congratulation that the effort made by this and kindred associations in the early part of last year to send representatives into the Council of the Royal College of Veterinary Surgeons, was eminently successful, as all such hearty, united action is sure to be. And there is no wonder that the Council has at last been aroused from its long sleep, and been quickened into new life and vigour—in fact, got a fresh lease of life, and has buckled on the armour to fight with ignorance, prejudice, and injustice; and let us see to it, gentlemen, that the armour is not thrown off, or the sword sheathed, until ignorance, both external and internal, be enlightened, prejudice removed, and every wrong be righted. The veterinary medical associations of the kingdom must be careful

every year in sending to the Council gentlemen who are, in every sense of the word, truly representative, who know the wants and requirements of the profession, and are themselves practically acquainted with the difficulties that the veterinary surgeon has daily to contend with. I look upon the Council and profession, as I do upon the human body: if you want the head to do good work, it must be steadily and regularly supplied with pure life-giving blood from a sound and healthy heart contained in a vigorous and active body. So if our Council, which is our head, is to do good, honest, valuable work, it must be annually supplied from the body corporate (the veterinary surgeons scattered throughout the length and breadth of the country, and who are largely represented in these associations) with fresh, vitalising blood, which, when it reaches the head, imparts new life and vigour, and enables it to perform with pleasure to itself and the body corporate all those varied duties and responsibilities which are so essential to its development and existence. We must not expect all our representatives to see alike, or to agree in all particulars, as that is not desirable even were it possible; for it is impossible for any two minds to view the same subject alike even from the same standpoint, hence we must be prepared for differences of opinion, and receive it with respect, however widely it may differ from our own, ever remembering that the best and noblest laws by which we as a nation are governed, have been arrived at after the freest and fullest expression of opinion.

Last year I expressed a hope that the Council in its wisdom would at no distant date make it compulsory for all intending students to have some practical training with a duly qualified veterinary surgeon previous to entering our colleges—a step, the importance of which, to the profession and the public at large, will be fraught with great benefit; for if a young man does not acquire previous to going to college a thorough practical knowledge of the routine work of the profession, with a quickened perception and a keen and observing eye, of the habits and peculiarities of the various domesticated animals in health and disease, I don't know any college or school that can or will supply the deficiency. Besides which, the pupils acquire by constant daily practice a manipulative dexterity and manner of going about and handling and administering medicines to his patients, that will save him from many an ugly kick and bite, and inspire confidence in the minds of his clients—aye, and who knows that the poor dumb patients themselves may not share to a large extent in the same feelings? A rare opportunity is also afforded the pupil of acquiring a knowledge of his future clients, which is only second in importance to the former, for I know not any calling in life that requires more knowledge of human nature, with tact and policy in using it, in order to ensure success, than the profession to which I have the pleasure and honour to belong. This opportunity and privilege the Council have now decided shall be given to every young man entering our colleges on and after 1884. Although only one year's pupilage is compulsory, it will in no way prevent a much longer period being served. If, in conjunction with this, the Royal College of Veterinary Surgeons were to attach a higher value and importance to the practical part of the student's examination for the diploma of the Royal College of Veterinary Surgeons, the colleges would then vie with each other in affording greater facilities and opportunities to students for acquiring such knowledge and skill, and after which one might hope and expect to hear no more of such cases of lamentable ignorance in young veterinary surgeons who are seeking admission into the army, and which cannot fail to have an injurious effect on us as a profession, and lower us in the estimation of the public.

It is with great pleasure I now view the position the profession has arrived at in regard to the Penal Clause—a clause to which we were fairly and legi-

timately entitled when the charter was first granted, and which omission laid a burden on the shoulders of veterinary surgeons, and more especially the country practitioners, that has been most grievous and intolerable. The Council have had a Bill drafted, entitled the "Veterinary Medical Bill," and which I hope will soon become law, which reserves to the members of the Royal College of Veterinary Surgeons the sole right to the use and title of veterinary surgeon. It is all very well for some veterinary surgeons, upon whom fortune has smiled, to say it will be of no value when you get it, etc., etc. I think its value and importance is demonstrated beyond all question or doubt by the fact of so many hundreds of ignorant, unqualified men now assuming it. The men know full well "what's in a name." Were the names farrier, cow-leech, horse-doctor, etc. (which, by the way, were very common thirty years ago, but somehow have now become obsolete) as good and acceptable to the public as the title of veterinary surgeon, they would have retained them. The quack of to-day is wise in his day and generation, and quick to perceive the signs of the times, viz., that the public do value and appreciate the services of the educated and qualified veterinary surgeon, and they mean by assuming the title to share in its benefits and rewards.

It has been said that the public care not what a man's title or learning may be, but who can most speedily restore their animals to health. My experience and observation tells me the public are not slow to appreciate the qualified veterinary surgeon, and also to understand and take advantage when necessary of the legal responsibilities that the holding of that title entails. The present unjust state of the law places the public in an anomalous position when they require the services of a veterinary surgeon. They have either to ask him if he is a member of the Royal College of Veterinary Surgeons—which is not pleasant, and from which most would shrink from doing—or what is most commonly done, take it for granted, until from experience they find out to their cost their mistake. This state of things is a gross injustice to the public and the duly qualified veterinary surgeon, who has probably devoted all his means, and years of hard labour and study, in acquiring a professional education, and then devoting his life to its practice in thehope (often a vain one) of obtaining an honourable position and subsistence for himself and those dependent upon him. I ask why should the public not have the same simple and easy method of recognizing the qualified from the unqualified, as they have in the sister profession? When such a boon is obtained, it will be of far greater value to us as a profession than it was to the medical profession. Having been myself in practice in a country district some fifteen years ago, I can bear feeling testimony to the injury done to the young veterinary surgeon who is striving to make a practice in a country town or village where a number of these men exist who assume the title of veterinary surgeon. I tried it, and was in a fair way of success, when my chief opponent, finding he was losing ground, called in the aid and assistance (which, I am sorry to say, was readily obtained) of an aged eminent qualified practitioner from a neighbouring town, to carry him through his difficult cases. Not being prepared to fight against such odds, I left the place in disgust, and went in search of fresh fields and pastures new; and after fourteen years' experience I have never had once to regret the step I then took, although I felt keenly the injustice that necessitated it. Had there been a Veterinary Medical Association then in existence, I should have brought such a breach of professional etiquette before them, but there was not, consequently I had no redress; but I hope, for the credit and honour of the profession, such cases are rare. It is, however, gratifying to know and say that in spite of many drawbacks and disadvantages, we are slowly and steadily advancing. Still, there are yet

many reforms and improvements much to be desired and hoped for, the dim outlines of which are only faintly visible in the distant horizon, but which will every year, with the united Veterinary Medical Associations, be gradually brought nearer, until they pass from the region of discussion and doubt into the reality of accomplished facts. Amongst these desirable measures I class exemption from juries, which injustice presses very hard on some members of our profession, and which exemption ought in all fairness to be extended to us, considering the fewness of our numbers, and the urgent and important services we are liable at any moment to be called upon to render. I also think the time has now come when the Board of Examiners appointed by the Council of R.C.V.S. ought to be selected from the members of our own profession; for in my opinion there is no better way of bringing out the latent talent now lying dormant in the profession than by throwing open to our members every possible avenue of honour and distinction that it has at its disposal. When such is done, you may rely upon it that there will be no lack of able and competent aspirants. I also think the time has fully come when veterinary surgeons ought to be appointed by the Government, city, and local authorities as inspectors of meat, instead of the present unsatisfactory uneducated men. The present state of things is largely due to our own apathy, but I do hope before long to see this state of things altered and this wrong redressed.

I have now, in conclusion, only to add a few words as to the advantages of Veterinary Medical Associations. First, they bring the scattered units of our profession together for social and fraternal intercourse, and thus learn to know and appreciate each other's many good opinions, and keep under subjection and control the bad ones; to cultivate good fellowship and kindly feeling and consideration one toward another; and should misunderstanding or unpleasantness arise, which, unfortunately, will arise in the best-regulated families, to constitute a council of appeal to adjust differences in an honourable and satisfactory manner.

> "For none of us know one another,
> And oft into error may fall;
> Then let us speak well of our brother,
> Or speak not about him at all."

Besides which, these constant meetings tend largely to cultivate a higher tone and standard of professional morality towards each other, and I hope the day is not far distant when in that respect we shall be the equals and not the imitators of the sister profession.

And last, but not least, there are the regular discussions on scientific and practical subjects where information and ideas are freely imparted and received, the practical results of which no one can estimate, for thought quickens thought as iron sharpeneth iron.

Members are also encouraged to investigate subjects that still lie in the region of doubt and uncertainty, and if any new light is obtained or discovery made, not to selfishly retain it or hide it under our own little bushel, but to let it burn in the full light of these associations and the profession generally, and thus add to our knowledge and pleasure by freely imparting it to others. And I cannot allow this opportunity to pass without expressing my gratitude and thanks to the members of this and the Lancashire Veterinary Medical Association for the very valuable information and instruction that I have from year to year received, and the pleasure I always derive from regularly attending the meetings. And I feel certain, were all the members of our profession who still stand aloof from the meetings of the Veterinary Medical Associations to adopt my plan, they would also have to chronicle like happy results.

Another sign of progress is the successful establishment, on a broad and liberal basis, of the National Veterinary Benevolent and Mutual Defence Association, under whose powerful wing every veterinary surgeon can and ought to find shelter, and whose advice and assistance in time of need will be found of great value, and whose officers never seem to fail or tire in advancing and fostering the interests committed to their charge; and I would strongly advise every veterinary surgeon to join the Association, and thus benefit himself and the widow and fatherless in their need and deepest distress.

Afterwards Mr. R. S. REYNOLDS opened the adjourned discussion on Mr. Greaves's paper on the "Penal and Apprenticeship Clauses," read at the previous meeting.

He remarked

*On Compulsory Pupilage.*

Upon the advisability or otherwise of instituting a compulsory apprenticeship before a candidate for the diploma is allowed to present himself for examination, a measure which, as you know, has been affirmatively determined, I voted in the minority.

Many of you will doubtless wonder at this, knowing that I have always been a strong advocate for practical instruction.

My reasons for opposing the motion do not accord with those expressed by a number of objectors; for there should, I think, scarcely be any diversity of opinion amongst practical men as to the desirability of affording the student an opportunity of acquiring manipulative dexterity and familiarity with the ordinary minor operations he will be called upon to perform so soon as he engages in actual practice.

Neither were my reasons for voting against compulsory apprenticeship in unison with those of gentlemen who think that a pre-collegiate pupilage unfits the student for the reception of scientific knowledge, and that, consequently, the best students are those who come to college direct from a shopkeeper's counter; for I distinctly recollect that the best students of my year not only excelled in practice, but beat the purely theoretical men all to nothing on their own subjects in competitive examinations, and in after life have been successful in the practice of their profession; but these were men whose apprenticeships had not been compulsory and undertaken for the purpose of passing over so much time with a duly-qualified practitioner, but entered upon with the purpose of gaining knowledge, with a strong love for their profession, and with an earnest desire to become skilful veterinary surgeons. Young men are not, or rather should not be sent to college *to be made good students of*, but the whole line of their education ought to have the one object—to make them *sound* and *scientific practitioners*. In favour of apprenticeship, and speaking from personal experience, I am proud to acknowledge that during my five years' pupilage in country practice I did not acquire one single practical fact that I have at any subsequent time found it desirable to forget. On the contrary, I attribute whatever success I may have achieved chiefly to the experience gained by such work.

Every circumstance in favour of apprenticeship I duly weighed before my vote against the system on the lines laid down by the mover of the motion was recorded, and this my reason. If the object of the measure is intended to ensure the possession of a higher standard of practical knowledge by candidates for the diploma, *it is far too weak for the purpose;* and if, on the other hand, it is intended to shield the examiners or the Council from the blame of passing or allowing to be passed inefficient men, I could not give it my support. I cannot and do not believe that Mr. Fleming, who has afforded such abundant evidences of his love for, and interest in the welfare of the profession, has conceived the measure for the purpose of exculpating the

Council or examining board, but that it may be made to serve so base a purpose seems to me very possible.

To make my case a little more clear, the free admission by the army examiners that aspirants for its veterinary service are wofully deficient in practical knowledge, naturally suggests the question, How came such men to be passed into the profession? In justification and in reply, the "pass" examiners as freely assert that the circumstances under which the examinations are conducted do not admit of the practical knowledge possessed by the candidates to be gauged. I attach no blame to the examiners in the conduct of their work as examiners, and I believe them to be not only men of ability, but of high honour; yet if the statements to which I have alluded are based upon the foundation of fact, they must be held culpable and wanting in courage for not representing to the Council in a plain, straightforward and forcible manner the difficulties under which they labour.

Depend upon it, the system of examination ought to bear the blame for the practical incompetency of some men who have been entrusted with a diploma, and that sooner or later the whole question must be grappled with; and whilst I allow that great difficulties stand in the way of carrying out a satisfactory practical test, I conceive it to be the duty of the Council to overcome those difficulties by vigorous action, and not lie down and hug itself with the puerile idea that a compulsory pupilage can remedy the evil against which complaints, both in and out of the profession, are loud in condemnation.

I hold the strongest opinion that the responsibility of passing only competent men into the profession ought to rest solely and entirely upon the examiners, and so long as I have any interest in the profession, I shall oppose all means tending to lessen one tittle of that responsibility.

Let it be understood that the possession of practical competency *must be a sine quâ non;* let the examiners be afforded the necessary facility for testing the students in this respect, and there is no doubt the candidates will attain, by some means or other, what is required from them.

The adoption of such a course can alone guarantee the admission of efficient men, and will do more to raise the standing of veterinary surgeons in public estimation than ten penal enactments or a thousand compulsory pupilage clauses.

Mr. WHITTLE endorsed Mr. Greaves's arguments respecting the apprenticeship system or pupilage, as he considered practical observation at this time so essential; he need only to compare medical pupils with ours to illustrate his reasoning.

Mr. MORGAN agreed with Mr. Reynolds, and considered the responsibility rested with the examiners; they were paid for it, and why should they not discharge their duties, although it might be painful? He looked upon the penal clause as a mockery.

Mr. FAULKNER would ask Mr. Morgan, who made the rules for the examiners as to time allowed them to examine the students? He believes the blame rests with the Council not giving the examiners greater facilities.

Mr. MOORE concurred in Mr. Faulkner's remarks, also in the penal clause.

Mr. LOCKE was in favour of the apprenticeship clause.

After a few remarks by the PRESIDENT,

Mr. REYNOLDS replied in support of his arguments.

The PRESIDENT then followed with two communications, which gave rise to an interesting discussion. He said, for many years I have been very much dissatisfied with the great uncertainty in diagnosing the various diseases of the bowels that the horse is subject to, the symptoms being so much alike that I seldom could venture an opinion whether the animal had died from a rup-

ture of the bowels, stoppage of the bowels from feculent matter, or from a calculus, or a single or double twist.

As no treatment is valuable unless based on a correct diagnosis, I set myself the task of closely watching all cases that were brought to me for treatment, with the hope that I might be able to discover some certain diagnostic symptom, peculiar to each, that would enable me to recognise with accuracy the disease I was treating.

At that time I was unfortunate in having a rather large proportion of fatal cases arising from single and double twists of the bowels, and feeling how utterly useless medicine and medical treatment were in such cases, I gave special thought to this class of abdominal complaints.

At last I was successful in recognising one symptom always present in this disease that is never present in any other, thus enabling me with confidence and accuracy to give a definite opinion.

In all cases of "twist" in the bowels, on exploring per rectum, an inflated portion of the colon is distinctly felt on the right side extending into the pelvis, and in cases of "double twist" almost completely filling that cavity, rendering it very difficult to explore, and giving the impression that the bladder was enormously distended. On reflection, I thought some different method of treatment was required, and I had a large padded loose-box made to put such cases into, in order to allow the patients to roll about and to get on to their backs, which I believe to be most valuable.

In other cases of "slight twist," when there was no great inclination to roll, I fastened ropes to the fetlocks, and when down had them rolled from side to side, with good results in one or two cases.

At last it struck me that if I could liberate the gas in the inflated portion of the colon, which seemed always to stop the peristaltic action of the bowels, it would cause them to collapse, the peristaltic action again to begin, and the bowel might then release itself. With this end in view, I decided to puncture the colon per rectum the next case that presented itself for treatment.

On January the 18th a chestnut cart-horse was brought to my infirmary, suffering from abdominal pain; he evidently had been very violent, being much bruised about the head, etc. The symptoms presented were as follows:—Pulse 48 and weak, visible mucous membranes very slightly infected, fæces small in quantity and size and very hard, but not coated with mucus, refused all food and water, pains frequent but not severe, lay down (always on the near side) and was quiet. Gave an ordinary colic drink and ʒiij. of aloes in a ball. In a few hours he appeared free from pain, and was discharged with instructions to give soft diet and a day's rest. On the 19th he again had frequent slight pains, but no notice was taken of them. On the 20th he got worse and was brought back to the infirmary. The symptoms being the same, I repeated the treatment. The following morning, however, the animal appearing very dull and listless, pulse 50 and weak, breath very fœtid, I began to suspect I had a case of single twist of the colon, and on exploring per rectum, I found on the right side the colon largely distended. I decided to puncture it per rectum, which I did with a trocar (four inches long and a quarter of an inch in diameter), allowing a large quantity of fœtid gas to escape through the canula and out per rectum. I held the canula in for five minutes until I distinctly felt the colon moving freely under my hand, when I withdrew the canula.

In less than half an hour the horse began to look about for food and water, which was supplied to him; the bowels began to respond, and the next day the horse was discharged and ordered to work, which he has continued to do up to date without any recurrence of the symptoms.

It is now about two years ago since I drew the attention of the members

of this Association to the peculiarity always observable in a twist of the bowels on exploring the rectum, and which I have no hesitation in saying is a certain diagnostic symptom, and the treatment I have now suggested, in skilful hands, is certain and safe; and I can, with confidence, recommend it to the members of this Association and to the profession in general.

Mr. FAULKNER next introduced the subject of the intended "Congress" to be held in London, the result being the formation of a committee, consisting of the President, Secretary, and Mr. Moore, to form part of the provisional committee of which Mr. Faulkner is secretary.

A committee was next formed, consisting of the President, Secretary, and Mr. Welsby, to act with the Lancashire Veterinary Medical Association to promote the re-election of the selected members of Council.

A hearty vote of thanks having been accorded to the President, Mr. Greaves, and Mr. Reynolds, the President handed to each member present a draft copy of "The Veterinary Medical Bill" and "The Veterinary Medical Act," and the meeting closed. WM. LEATHER, *Hon. Sec.*

## MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE regular fortnightly meeting of this Association was held in the lecture-room of the Veterinary College, on February 3rd; Mr. C. J. Alloway, V.S., President, in the chair.

Mr. WILLIAM BELL, Kars, Ont., was balloted for and elected a member of the Association.

After the usual preliminary business had been disposed of, the CHAIRMAN called on Mr. Richard Price to read his communication on *Enteritis*.

Mr. PRICE described the history, symptoms, treatment, and *post-mortem* lesions of a typical case from notes taken by himself, which gave rise to an interesting discussion.

Mr. C. B. ROBINSON, St. Thomas, Ont., read the notes of a case diagnosed to be acute Nephritis in a horse on his own farm, which yielded to active treatment and made a rapid recovery.

Mr. E. J. CARTER was then called upon to read his paper on Counter-Irritation in the treatment of chest affections. The reader stated that this was a subject which had of late given rise to considerable discussion among veterinarians, especially in England, some of the best minds in the profession being for and against the employment of counter-irritation in the treatment of chest affections. He gave a *resumé* of the arguments advanced *pro* and *con*, and summed up by agreeing with the idea that counter-irritation had been used too much in chest affections and ought to be replaced by milder and more soothing treatment.

Mr. M. C. BAKER, V.S., considered that the idea of applying counter-irritations to the chest for the purpose of drawing blood from the inflamed lung or pleura was wrong in theory, as by increasing the cutaneous circulation the pressure of the pulmonary circulation is increased, and harm produced instead of good. He would object, except in lymphatic horses, to actual counter-irritation, but favoured mild stimulation of the chest.

Mr. WILLIAM MCEACHRAN considered that the application of hot poultices to the chest was to be preferred to actual counter-irritations, as they caused less irritation to the animal.

Prof. MCEACHRAN stated that in his experience poultices to the chest had a much more soothing effect on the animal, and objected to severe blistering on account of the irritation it gave the animals, and the injury sometimes produced on their sides.

The CHAIRMAN thought that fomentations or poultices were more rational and produced better results than counter-irritants.

Other speakers followed, the majority being in favour of a milder form of treatment.

The SECRETARY also read an interesting communication received from Mr. W. L. Williams, V.S., Bloomington, Ill., U.S.A., recording eight cases in which he punctured the intestine in the horse for Tympanitis, in all of which he was successful in relieving the animal, and in none of which was Peritonitis produced, and from which he concluded that the use of the trocar and canula is as safe in the horse as in the cow. He also recommends its use early in the affection.

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## THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

FINANCIAL STATEMENT FROM FEB. 12TH, 1880, TO MARCH 9TH, 1881.

*The Veterinary Mutual Defence Fund.*

| CASH RECEIVED. | £ | s. | d. |
|---|---|---|---|
| Balance of Account and cash in hand, February 12th, 1880 .. .. .. | 186 | 15 | 5 |
| Subscriptions of Members from Feb. 12th, 1880, to March 9th, 1881 .. | 123 | 16 | 6 |
| Bank Interest, June 24th, 1880 .. | 1 | 10 | 1 |
| ,, Dec. 24th, 1880 .. | 1 | 5 | 6 |
| | £313 | 7 | 6 |

| CASH PAID. 1881. | £ | s. | d. |
|---|---|---|---|
| March—Sec. Sundry Expenses .. | 1 | 10 | 0 |
| Treasurer's ditto .. .. | 2 | 8 | 0 |
| Cash in hand .. .. | 1 | 19 | 6 |
| Cash in Bank .. .. | 307 | 10 | 0 |
| | £313 | 7 | 6 |

Audited and found correct,
EDMD. NUTTALL, Preston.

*The National Veterinary Benevolent Fund.*

| CASH RECEIVED. | £ | s. | d. |
|---|---|---|---|
| Balance of Account, Feb. 12th, 1880 | 1,357 | 7 | 8 |
| Subscriptions of Members .. .. | 6 | 1 | 0 |
| Bank Interest, June 24th, 1880 .. | 11 | 18 | 0 |
| ,, Dec. 24th, 1880 .. | 0 | 16 | 6 |
| Coupon on £1,300 invested in the Mersey Dock Estate, July 5th, 1881 | 22 | 11 | 0 |
| | £1,398 | 14 | 2 |

| CASH PAID. 1881. | £ | s. | d. |
|---|---|---|---|
| July 5th.—Cash invested in the Mersey Dock Estate in the name of four Trustees, viz., Peter Taylor, Manchester; Thomas Greaves, Manchester; William Whittle, Worsley; Richard Reynolds, Liverpool, at 4 per cent. for 20 years .. .. | 1,300 | 0 | 0 |
| Cash in Bank .. .. .. .. | 98 | 14 | 2 |
| | £1,398 | 14 | 2 |

Audited and found correct,
EDMD. NUTTALL, Preston.

Amount of arrears at this date, £112 17s. 6d.

THOMAS GREAVES, *Hon. Sec.*

Knott Mill, Manchester.

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# Army Veterinary Department.

*Gazette*, February 18th.

ROYAL ARTILLERY.—Veterinary Surgeon, First Class, Edward Kelly, retires upon half-pay.

*Gazette*, February 25th.

VETERINARY DEPARTMENT.—The under-mentioned gentlemen to be Veterinary Surgeons on probation:—J. H. Steel, E. H. Kelly, E. E. Bennett.

*Gazette*, March 11th.

VETERINARY DEPARTMENT.—Veterinary Surgeon, First Class, James Lambert, to be Inspecting Veterinary Surgeon. Veterinary Surgeon G. D. Whitfield from half pay, to be Veterinary Surgeon, in succession to Veterinary Surgeon, First Class, Edward Kelly, retired on full pay.

It is, we believe, a fact that the unification of the Army Veterinary Department has been finally decided and acted upon. Henceforth veterinary surgeons will not be commissioned to cavalry regiments or corps; all belong to the Department, and are on one roster for general service, though a veterinary surgeon may be posted to a regiment for five years. In accordance with this decision, several veterinary surgeons have been moved from their regiments and sent on active service to South Africa for general duty. These are Messrs. W. Pallin (20th Hussars), Jones (2nd Dragoon Guards), Hanly (4th Dragoon Guards). In addition to these veterinary surgeons in Natal, there are also Messrs. Reilly (attached to 7th Hussars), Gillard (attached to 15th Hussars), Findlay (attached to Inniskilling Dragoons), D. C. Pallin (attached to 14th Hussars), Sartin, Duck, Durant, Rutherford, Caldecott.

Inspecting Veterinary Surgeon Lambert is in Natal as Administrative Officer, being succeeded as Instructor at the Aldershot Army Veterinary School, by First Class W. B. Walters, from the Royal Engineers.

We understand that a warrant will shortly be issued for the employment, under special circumstances, of veterinary surgeons belonging to Yeomanry Cavalry regiments, and also half-pay or retired army veterinary surgeons, in certain military districts. The scale of pay for these will probably be £150 a year, exclusive of the retired or half pay of the army men, and the ordinary pay allowed to the former when called out for drill or other duty.

Complaints have been made as to forage caps supplied to army veterinary surgeons by military outfitters; and having inquired into some of these complaints, we find they are justified, the cap not being made according to the sealed pattern. The Dress Regulations gives the patterns as follows:—"Blue cloth with band of 1¾-inch gold lace, with gold purl button on the top. Peak, staff pattern for the principal veterinary surgeon and inspecting veterinary surgeons; without peak for other grades." Outfitters should be compelled to take back articles of dress which are not according to regulation.

## Obituary.

THE death is reported of Mr. James Rowe, M.R.C.V.S., of Oseney Crescent, Camden Town, in his sixty-third year. He graduated in 1842, and had for some time retired from the active practice of his profession.

## Notes and News.

ANOTHER VETERINARY SCHOOL.—We learn from *Land* of March 5th, that a movement is on foot to establish a veterinary school in Aberdeen. That journal adds:—"The rearing of valuable animals demands the utmost confidence in the resources of the veterinary art, and there have not been wanting whispers of dissatisfaction with the facilities offered to intending veterinary surgeons at the southern veterinary colleges. In particular, much stress has been laid upon the incomplete study of animal pathology."

# Correspondence, etc.

## THE ADVANTAGES OF VEGETABLE CHARCOAL.

SIR,—The new war in South Africa will probably cause some veterinary surgeons to be sent to that country. Transport is a knotty question in South Africa; I need not, therefore, apologise for writing to remind any of your readers, who may be going out, of a very simple remedy for wounds, which may be useful if they run short of medicines at any time. I am alluding to vegetable charcoal, which can be obtained from any camp-fire in a more or less pure condition. I have used it with great success. During last monsoon I had a very bad case of broken knees, and several animals with large superficial wounds, under treatment. I employed most of the ordinary remedies, but with very unsatisfactory results. In fact, it was as much as I could do to keep them in *statu quo*. About this time several grass-cutters' "tats" were brought to me with sore backs, varying in diameter from a five-shilling piece to a saucer. I had the places washed, and not wishing to bury my stock of medicines in the wounds, I cast about for some simple remedy which would cure them. I ordered some wood-charcoal from the forge to be powdered, made into a paste with water, and applied daily. To make a long story short, I found that the ponies made far greater progress than the animals in the sick lines, and therefore determined to treat the troopers' wounds in the same manner. I was most successful, and had no more trouble in getting the wounds to heal. I now use it as a powder (not paste), as I find it adheres better. It prevents flies getting to a wound when the latter is dressed with a thick coating, and I am not troubled with luxurious granulations as I used to be. Vegetable charcoal is no new application, neither do I suppose it to be a specific for all wounds; but it is a very useful remedy, always obtainable, and, as such, well worthy of being tried where nothing else is to be had. *Apropos* of charcoal, I will (if you think it worth the space) state my experience of it as an antidote in cases of Tulip-poisoning in South Africa. It fell to my lot, when at Landmann's Drift, to witness an outbreak of Tulip-poisoning in the 17th Lancers. An account was published soon after in the VETERINARY JOURNAL. I need not, therefore, go over the old ground again, but merely mention that the animals showed symptoms of flatulent Colic, accompanied by depression, and more or less coma. They were treated by veterinary surgeon Lambert, with burned tulip-root, and with very good results, considering how badly the animals were attacked. When the regiment left the station, I remained in charge, and had very frequent opportunities of seeing the poison at work in horses belonging to transport riders and to men going to join the different volunteer corps. I tried burned tulip-root, Spt. Am. Arom., and Am. Carb., alone and combined. I found nothing so effective as tulip charcoal and aromatic spirits of ammonia given together. I frequently tried the charcoal by itself; but although it did good, its effect was always enhanced when Arom. Spt. Ammon. was added. My theory is, that the tulip-root acts merely as an absorbent of gases, and that by administering ammonia I assisted its action by neutralizing the carbonic acid gas, which is found in such large quantities in Tympanitis. I attended numerous cases, and always with success, when I resorted to the above treatment.

I am, Sir, yours truly,

F. RAYMOND, A.V.D.,

*17th Lancers.*

Mhow, India.

## SALICYLIC ACID.

SIR,—The Duke of Brunswick's success in the treatment of the Foot-and-mouth Disease with salicylic acid appears to be received as something *de novo;* and as I have had some experience of the value of this compound in the treatment of cattle and sheep when affected with diseases of an infectious type, I feel I am in duty bound to state the fact out of honesty to my veterinary surgeon, who, I have reason to consider, after my ample practical experience of many years, to be one of your most proficient and successful cattle pathologists (and I speak plainly and honestly, for the only friendship between myself and the gentleman referred to is that which does exist between a client and his professional adviser). I allude to Mr. Robert Ward, F.R.C.V.S., of Paddington, who some seven years ago treated my herd of cows, "a valuable one," at Compton, near Winchester, most successfully, as he also did some others in the county of Hants. Mr. Ward informed me he wrote a short article on the value of salicylic acid to the Journal some two years ago. You will see from this that the introduction of this remedy for the diseases of cattle and sheep takes an earlier date than that of the Duke of Brunswick's experiments, and by an English practitioner. "Honour to whom honour is due."

Yours obediently,

Barton Farm, Marlborough, Wilts,
*February 3rd*, 1881.

ROBERT S. LYNE.

## THE BUILDING FUND OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

DEAR SIR,—I regret you have such a sad tale to tell about the *progress* (pardon the underline) of the above fund. I am glad, however, to hear it whispered that one of the Vice-presidents, to whom the practice of our profession has been kind, has generously handed a contribution to the fund, and I trust this spontaneous act may stimulate others quite as able, but not more willing, to assist this most desirable object—the only means whereby we may place our profession in the position it is now time it occupied.

It has occurred to me that the college might, with every advantage to herself and the craft, institute a registration fee; that is to say, members in practice paying, say an annual subscription of 10s. 6d., shall have their names inserted in the annual register, which register shall be issued gratuitously to chairmen of county magistrates, clerks of peace, chief constables, etc.

The proprietors of Kelly's Directory print and publish a similar register of medical practitioners, and are the best people for such a business, for then the insertion of quacks with the qualified in their directories will cease.

I submit the idea for what it is worth, thinking that the present circulation of our register is quite useless for public usefulness and our advantage.

Yours truly,

London, *March 17th*, 1881.

ROBERT WARD.

## BROSNAN *v.* BIGNOLD.

SIR,—The "Paradise" persecution is still unpleasantly fresh in our memories, but nevertheless some of us were beginning to hope that "charity" was being exercised, and that the spirit and intention of Veterinary Medical Associations (the presidential chair of one of which has been for the last two years filled by the leading witness for the plaintiff) were being more earnestly, carried out, when we are once more reminded, by the case of Brosnan *v.* Bignold, that our remembrance of the Paradise case is not likely to deaden, or that our hopes of the extension of charity to our brethren will not be realised yet awhile.

Some months ago I heard, when in London, the full particulars of this case, and so thoroughly satisfied was I, by the evidence given to me of the persecutory nature of the business, that I requested Mr. Rowe to place my services at the full disposal of Mr. Bignold, if required. The names and number of the veterinary surgeons, however, who appeared for Mr. Bignold, together with those in reserve, as opposed to the opposite side, rendered my attendance, and that of plenty of others who would have been willing to go, unnecessary. Add to which, those eminent names and numbers which were present speak volumes for the innocence of Mr. Bignold, and the good cause he had the courage to defend.

That this trial will entail a severe expense to both parties is but too patent; but so far as Mr. Bignold is concerned, he may rest assured he has the full sympathy of the profession in general, and I for one, though not enjoying the pleasure of his personal acquaintance, shall be pleased, if there be need of such charity, to send my mite towards his pecuniary burden, remembering that an ounce of help is worth a pound of pity. And in the meantime, touching the moral aspect of the trial, Mr. Bignold may take comfort from the old Scotch proverb, that *Right wrongs nae man.*

Yours truly,

Wolverhampton, *3rd March*, 1881. J. WOODROFFE HILL, F.R.C.V.S.

## MR. STEPHENSON AND THE VETERINARY MEDICAL BILL.

SIR,—I am much surprised at not seeing a reply to Mr. Stephenson's paper on "Veterinary Topics" from some of the literary members of the profession. I think it is evident that Mr. Stephenson could not understand the real intention of the Veterinary Medical Bill, or as it used to be termed, the "Penal Clause," or he would not have misinterpreted it as he did, and so tend to mislead some members. The Bill appears to me to be very simple, and I, of course, thought we should be unanimous in supporting it; never dreaming of a division among ourselves. It is a measure which the profession has required for a long time, and all that was necessary in order to carry it forward was a leader who would take a deep interest in its advancement, would give his time to it, and, above all, apply himself assiduously to the task before him. No one could have so well undertaken the labour as the indefatigable Mr. Fleming; and I fancy Mr. Stephenson did not know the determination of character of Mr. Fleming, when he spoke of his having dropped the Penal Bill.

I am unable to discover in Mr. Stephenson's paper any reasonable argument against the Bill. One would be led to think, on reading that paper, that the profession, in supporting the Bill, really wished to utterly extinguish unqualified men. Now, I am willing to confess there are some very excellent men among these, and for some of them we entertain great respect; and we do not despise them because they have not had the advantage of a veterinary education. That is their misfortune, not their fault; we only want to do what is just to all. What we object to, is quacks assuming our title. Mr. Stephenson argues that the public know whom they are employing. But he happens to reside in a large town where there are perhaps very few of these unqualified men practising; if he lived in one of the small provincial towns—some of which are not much larger than villages—he would find that the qualified man is surrounded by persons such as grooms, coachmen, blacksmiths—and I have even heard of returned convicts—with Veterinary Surgeon on or over their door. These men will declare in the presence of grooms and others, in tap-rooms, public-house bars, and other places, that they are properly qualified. Some of them are perhaps crafty, and understand human character; they may be able to handle a horse or cow pretty well, and have plenty of what is called "bounce." I say that the majority of

the public have no means of discriminating between these and qualified men, especially when the medium of discrimination is—as only too frequently happens—the groom, coachman, or waggoner. I have been oftentimes written to by parties who wished to know if Mr. So-and-so, practising in some neighbouring town, had a diploma.

If such men are always to be permitted to enjoy the immunity they have hitherto availed themselves of, now that the standard of education has been raised, matriculation more severe, professional examinations more rigid, and expenses greatly increased, I cannot see what inducement there is for a parent to place an educated son with a veterinary surgeon for two or three years (for it should not be a less period), at a cost of two or three hundred pounds, including clothes, etc.; then to work hard at college for three years at great expense, and on graduating, to invest, perhaps, several hundred pounds in the purchase of a practice—if, at the end of all this, the young beginner finds an unqualified man, who has never studied an hour, or spent a penny in acquiring a knowledge of the veterinary art, who may be unable to write his own name, who associates and drinks with grooms, waggoners, and such men who recommend and get him plenty of work to do, who, by adopting our title, is on the same professional footing as himself. Such men having no establishment or position to keep up, can live and work cheaper, and this, in the majority of instances, cuts away the ground from under the veterinary surgeon's feet; for he cannot descend to practices nor associate with the people the pretender does.

And yet Mr. Stephenson says, in opposing this Bill, that we live in busy times, and must not stand still, but be going either forward or backward. I think we have remained stationary long enough. Even agricultural labourers have their unions, and employ men to talk for them—as they cannot talk themselves—in order to advance their interests and improve their position. The surgeons have protection, as quacks dare not adopt their title to impose on the public; solicitors are in the same category; and I think the time has now arrived when we should bestir ourselves to carry this Bill through Parliament for our protection. If it becomes law it will improve our own social and professional position, as it is evident to those in certain districts that these illiterate men do veterinary surgeons an immense amount of injury, pecuniarily as well as socially. And yet Mr. Stephenson has the temerity to assert that the enlightened industrious veterinary surgeon requires or desires no Act of Parliament to protect him; from which it might be concluded that as the profession is unanimously of opinion that it is both desirable and necessary, Mr. S. is the only enlightened member among us.

We are either veterinary surgeons, or we are not. If we are, then it is our duty energetically to protect our title, and not allow it to be degraded and the public imposed upon. Let them have what they ask for—the best advice and assistance; they should know whom they are employing. Under the Adulteration Act, grocers are not allowed to deceive the public in, for instance, the matter of coffee and chicory.

The Bill may not, perhaps, be of much benefit to the profession in this generation, but it is our duty to leave our vocation better than we found it. If there is not any advantage to be derived from studying at the veterinary schools, then shut them up, and adopt Mr. Stephenson's notions. We have no desire to suppress the quack, but rather go in for free trade and no monopoly; but we must remember that he is trading under a false title. What we ask for is the protection the Charter provided for us—to the effect that the properly qualified member shall, solely and exclusively of all other persons whomsoever, be individually known and distinguished by the name and title of "veterinary surgeon."

Yours, etc.,

Rochester, Kent. J. B. MARTIN.

## "THE COURT OF EXAMINERS OF THE ROYAL COLLEGE.

SIR,—This court is composed of seven Doctors and Professors of human medicine and eight Veterinary Surgeons. They are all gentlemen of acknowledged ability and eminence, and until four years ago they were elected for life. They are now elected for a period of five years. This term will expire next year, when a new Court of Examiners will be elected by the Council, the present members being eligible for re-election. It is intended, also, to rearrange the subjects at the three tables. We have always been told that it is necessary, above all things, that the gentlemen composing the Board of Examiners should be those whose names carry weight, and which stamp the diploma with dignity and importance. Now nothing can be further from my mind than a desire to cast disrespect upon this idea, or to show the slightest shade of ingratitude for the great services rendered to our profession by the sister profession. My object is solely to call attention to the subject by frankly and unreservedly discussing this important question, and possibly induce some abler pen than mine to carefully ventilate it.

I have a diploma signed by the most eminent men in London forty years ago. I appreciated it as highly as any of my professional brethren ever did theirs; it was mounted in a very beautiful frame, and hung up in the most conspicuous place in my establishment; I felt so proud of it that I vainly conceived the idea that this array of testimony as to my professional skill and efficiency would assuredly cause the public to confide in me, and that my pathway to success was ensured; but I soon found that I was hugging a delusion. I believe that from that day to this not a single client I have had during those years has ever once read it, or scanned the names that are affixed to it. It has taught me this lesson, that the public do not trouble themselves about it; it is a matter of little or no consequence to them who signs our diplomas; it is not a diploma, nor the weight of the names that are attached to it, that will give the public confidence in us; it is ourselves, and in ourselves alone. It is our address, our business habits, and our success with our patients that will command confidence and respect. If we are unable to restore the sick horse to health, the lame horse to soundness in a reasonable time, or, as my friend Stephenson has it, "make the hunter go again," depend upon it the names with the greatest weight—even if headed by Albert Edward himself—would be of no avail to us in creating confidence or ensuring success in life. There are Professors and a few eccentric individuals who may and do think and argue just the reverse: they view the matter from their own stand-point, not from the stand-point of the general practitioner or the public. It is high time we understood this question aright. Our profession must stand or fall by the amount and degree of service it can render to the community. No Act of Parliament or the patronage of titled persons will commend it to the world, unless it can show that it is deserving of commendation through its utility and the manner in which it pursues its aims and aspirations.

It is admitted on all hands that education, lectures, cramming, and grinding can never of themselves make a veterinary surgeon; they never did and never will. Our Court of Examiners know this, and the public know this. The present method of instruction at our colleges is exceedingly defective, as is also the mode of examination of our students, which is not thorough; and the result is that students are lamentably deficient in their veterinary knowledge, and bring disgrace upon themselves and the profession to which they belong. Do you ask me for my proofs? Only at a late quarterly meeting of Council, the Principal of the Army, Mr. Collins, made this astounding statement, "that not one half of the veterinary surgeons who apply for a commission in the Army can tell which is the lame foot of a

horse, and on other points they were equally deficient;" and recently a learned Professor from Camden Town College told me "that he had no hesitation whatever in saying that there were a greater per-centage of practical students turned out from the college fifteen years ago than there are now." Now I take my stand on these two statements, the truth of which is borne out by every-day experience; and what I ask my profession to do is this, that we try and trace this defect to its source. What surprises me and others most is this, that the veterinary surgeon of to-day, however well-educated he may be, and however large his ability and extent of experience, is held to be utterly unfit to impart any information on veterinary matters to the veterinary aspirant; but to-morrow, if this same veterinary surgeon has been dubbed, or dubs himself, a "Professor," he can then inculcate the same ideas with impunity, or any ideas however absurd or ridiculous they may be. I ask my readers, or any impartial or fair-thinking man, whether this is not incongruous, and whether there is not an utter absence of logical inference.

We find that the Examiners who are Doctors or Professors of human medicine, but who are admittedly ignorant of veterinary knowledge, may consider that the ordeal the student has just passed through in botany, chemistry, materia medica, physiology, and anatomy has been very satisfactory *to their ideas*, and they give him a verdict or mark of very good, when in reality the said student is deficient in every essential qualification that goes to make an efficient veterinary surgeon. I very well remember one night, during an interval between the examinations, Professor Spooner handing a skull of a horse to one of the examiners, a Professor of human medicine, and asking him what age he thought it was. His reply was, "I have no idea. I know nothing whatever about horses." He then asked Dr. Sharpey and Dr. Taylor, gentlemen who were an honour to the position they occupied in their own profession; but mark their answer: "I can form no idea; I know nothing about horses; but, judging from analogy, I should say it was aged, the sutures of the head having become ossified." And so it was; but only think—the very best men that can be got from the sister profession, men whose names carry weight with them, frankly admitting that they know nothing about horses! How, I would ask, can it be expected that such men can form an opinion about the kind of knowledge the veterinary surgeon should possess, or that the veterinary profession requires? Would it not be much more rational, and in accordance with common sense, that the Board should be composed of none but veterinary surgeons? They should be gentlemen of education, and large experience and ability; men of unswerving integrity, and who know thoroughly what the nature of the profession is, and its duties, and who are able to form a correct opinion of the individual's suitableness, his aptitude, the nature of the knowledge he possesses, and are moreover hard-headed men, who have the courage and firmness to reject all students who do not come up to the necessary standard of efficiency. This system would be a strong inducement for all teachers to receive with open arms any and every offer to provide adjuncts to their own teaching at college, in order to redound to the credit of their individual colleges, and the greater usefulness in society of the students emanating from their schools. But are we not told that we shall be acting illegitimately if we insist on the student serving an apprenticeship, and quite legitimately if we reject students who are deficient, whatever their number may be? But here let me ask, do not Professors bitterly complain, even now, at the number rejected? What would they do or say if the number of rejected students were double or treble what it is at the present time? Possibly they would make an attempt to form another Examining Board, and again create disunion and antagonism in the profession.

Yours truly,

Manchester, *March 10th.* THOMAS GREAVES.

## SOCIAL STATUS OF THE VETERINARY SURGEON.

DEAR SIR,—From time to time numerous letters appear in the Veterinary periodicals on the subject, "Social Status of the Veterinary Surgeon." It is observed that most of the authors of these letters condemn the public for not according veterinary surgeons that position in society which a scientific profession entitles its members to hold. Further, they credit the quack horse-doctor with the onus of the present degraded state of the profession in public opinion, on the ground that the title of veterinary surgeon is not protected by law, and therefore the public are unable to distinguish the qualified veterinary surgeon from the empiric.

Now, undoubtedly, from a scientific point of view, the profession of medicine and surgery applied to the lower animals is not inferior to that applied to man; yet how comes it that scientific bodies, and the public generally, estimate members of the veterinary profession so far inferior to members of the medical profession? There is no denying the fact that members of the Royal College of Veterinary Surgeons are little thought of as scientific men in the scientific world. And why is this? Obviously, I think it is to be attributed to the *defective education* of the large majority of the representatives of our profession.

Surely the public are not to blame because they estimate us only according to our general educational status; and the quacks cannot be reproached for degrading us when the Royal College of Veterinary Surgeons confers its diploma on men of no higher educational qualification than these individuals possess.

The proposed Bill for the protection of the title of veterinary surgeon may soon become law, thanks to your indefatigable exertions, Mr. Editor; but unless the future members of the profession *are insured a liberal education, at least equal to that of the sister profession,** our social position will most certainly remain in its present unsatisfactory condition.

No Act of Parliament can ever give the veterinary surgeon that social status which members of a scientific profession should possess, until the Royal College of Veterinary Surgeons, which is responsible for the education of its graduates, both scientifically and otherwise, *prevents the admission of uneducated members to its ranks.* Truly yours,

W. T. MASTERS, A.V.D.,
*Royal Artillery.*

Brussels, *March 13th*, 1881.

## WHY IS THE ARMY VETERINARY DEPARTMENT UNPOPULAR?

DEAR SIR,—Owing to the numerous duties in and out of the service, I have been unable to render a reply to "Ubique" on the subject embraced in the above heading.

When I made the statement that the Veterinary Department was worthy of the consideration of those gentlemen about to start their career in life, I was unaware of the true conditions under which they would be compelled to serve. It was after my letter had been despatched that I gleaned from the pages of the VETERINARY JOURNAL, that £1,600 was the sum total of what they may be expected to receive—that is, presuming they fulfilled the requirements of twenty years' service. I was under the impression, like many others, that if they were, after ten years, selected for future service, they would then run for pension; it appears, however, that such is not the case. I forbear, at present, making any allusions to this subject, as the precocious youngster is well calculated to look after his own interest.

* I am glad to find that this subject is now being considered by the Royal College of Veterinary Surgeons.

The question of riding and quarter-masters being eligible for presentation at court may or not be correct—it is for ourselves that we are working. I certainly have come across one man of this class who has experienced this honour. The time I have spent in India precludes me from giving as decided opinion as I should wish, but I know I am correct in the one instance alluded to.

Time, that arch enemy of ours, is speeding on his way, and we alone are stationary. Where is the committee that was to have purged the old leaven and made all things new? Does it exist only in name, or are its deliberations consigned to the pigeon-hole or waste paper-basket? We are waiting, anxiously waiting, but hope deferred maketh the heart sick. Stories are propagated which I am told to believe, but their repetition is so frequent that one's trust and confidence is well-nigh shaken. No, I will not believe them; my faith is not of such an evanescent character that I would feign join—shall I say the multitude?—in the hue and cry.

Do you know, Mr. Editor, what a grievance is? If so, you can sympathise with the suffering mortals in the department in India. A grievance, I take it, is only the embryonic state of injury, and injury is the precursor of insult, and few men cultivate the former without developing the latter. Why not wipe all these away? A little generosity would establish a healthy reaction; and instead of men cursing the day they ever entered the department or put their foot on yon arid soil, they would look upon it as the only means of shaking the pagoda-tree, if only the smallest of the small branches.

I am not joking, lookers-on see all the fun, if fun it may be called. Men there are who put on a grave look, and assume that serious aspect only displayed by the *cognescenti*. Scarcely a man you meet but what, by his piteous howl, portrays the feelings of the inner man, and were they (speaking collectively) not confined by strictly moral teachings and examples, their ideas would bring them to the brink of suicide or homicide! I dare not recite what they give utterance to—the gods would open their auriculars and become astonished, and condemn them to that banishment, *half-pay!*

In my vision I dream of better days, when the old mantle of suspicion shall have given place to the modern one of trust and confidence, and where all is love, unity, and concord. In these nightly wanderings I have endeavoured to discover this harbinger of good news—but lo and behold! a blank existed where seconds before stood this semblance of human form divine. Where is the committee, I say, where is the committee? We are waiting, anxiously waiting! Believe me, Yours faithfully,

*March* 11*th*, 1881. "PFERD."

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## THE MATRICULATORY EXAMINATION.

DEAR SIR,—It was with great pleasure I read your motions at the meeting of the Council, viz., "That the Royal College of Veterinary Surgeons shall take upon itself the duty of exacting a Matriculatory Examination from the candidates for its diploma; also that this shall be of two grades—that which qualifies only for membership, and that which will allow a graduate to compete for the Fellowship degree."

I think it only just that the standard of the examination required to be passed before admission to any of the schools, should be fixed by the Royal College of Veterinary Surgeons, so as to render it universal, and do away with the feeling which undoubtedly now exists, that certain schools bid for students, by lowering the standard of the matriculatory examination.

I know of instances in which a student having presented himself for this examination at one college several times, and each time failing, has gone to nother and satisfied (?) his examiners at the first attempt. This state of

things ought not to be; and I am sure the profession will heartily thank you for having moved in the matter, and so conferred another to the many benefits you have bestowed upon it. Yours faithfully,

Pendlebury, Manchester. CHAS. E. CHALLINOR, F.R.C.V.S.

## TESTIMONIAL TO MR. STEEL.

SIR,—Since Mr. Steel has resigned his position as lecturer on anatomy at the Royal Veterinary College, a number of his former pupils have arranged to present him with some testimonial expressive of their gratitude. We believe the opportunity should not be lost of enabling other members to mark their sense of the services rendered by him to the profession. Zealous and truly scientific workers are scarce. Therefore let us show our appreciation by some small present, and by a good list of subscribers. Those who wish to assist us will greatly oblige by forwarding their subscriptions to any of the under-mentioned members of the committee. The subscription list closes April 25th.

If you will kindly make this known through your valuable columns you will greatly oblige, Your obedient servants,

GEO. A. BANHAM, The Brown Institution, Wandsworth Road, S.W.
WM. A. EDGAR, Westfield House, Dartford, Kent.
WM. HUNTING, 15A, Down Street, Piccadilly, W.
E. S. SHAVE, Royal Veterinary College, Camden Town, N.W.

## TO CORRESPONDENTS.

PAPERS pressed out of this month's Journal will appear in our next.

## Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from J. C. Berne, Army Veterinary Department, Ireland; J. W. Hill, Wolverhampton; J. Dowling Allman, London; J. H. Steel, Army Veterinary Department, Woolwich; R. W. Burke, Edinburgh; G. A. Banham, London; A. Metherell, Brighton; Sir F. Fitzwygram, Bart., Havant; C. E. Challinor, Pendlebury; W. F. Garside, Berlin; T. Greaves, Manchester; "Pferd"; W. Masters, Army Veterinary Department; "Argus"; G. A. Oliver, Army Veterinary Department, Kirkee; J. H. Cox, Army Veterinary Department; W. Leather, Liverpool; R. Ward, London; R. R. Roberts, Wrexham.

BOOKS AND PAMPHLETS: *J. Cleland, M.D.*, Evolution, Expression, and Sensation; *J. S. Lombard, M.D.*, Experimental Researches on the Temperature of the Head; *J. Rosenthal, M.D.*, General Physiology of Muscles and Nerves; *A. Von. Rueff, M.D.*, Die Impfung beim Kampfe gegen die Lungenseuche; Etat Sanitaire des Animaux Domestiques dans le Brabant; *P. Francesco*, Del Lattime; *Zundel*, La Nouvelle Loi de Police Sanitaire Vétérinaire; Dizionario, etc.; delle Scienze Mediche e Vétérinarie.

JOURNALS, ETC.: *Revue Veterinaire; Wochenschrift für Thierheilkunde und Viehzucht; Der Thierarzt; Recueil de Méd. Vétérinaire; Deutsche Zeitschrift für Thiermedicin and Vergleichende Pathologie; L'Echo Vétérinaire; Archives Vétérinaire; La Presse Vétérinaire; Gazetta degli Ospitali; La Clinica Veterinairia; Land; Mark Lane Express; Land and Water; Field; Agricultural Gazette; Farmer; Annales de Méd. Vétérinaire; Live Stock Journal; British Medical Journal; Lancet; Bulletin de la Soc. Centrale de Médecine Vétérinaire; Sanitary Record; American Live Stock Journal; Journal de Méd. Vétérinaire et de Zootechnie; American Veterinary Review; Edinburgh Medical Journal.*

NEWSPAPERS: *Irish Times; Madras Mail; Irish Sportsman; Northern Evening Mail; Durham County Advertiser; Scotsman; Metropolitan; Glasgow Citizen; Montreal Gazette; Oldham Evening Chronicle.*